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PREHISTORIC MESOAMERICA

THIRD EDITION

RICHARD E. W. ADAMS



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Richard E. W. Adams

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FOR JOEY, 1966–1975

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PREFACE

Second Edition

In each age humanity attempts to understand its past. In our own, if we accept the universality of human cultural experience, we must also attempt to understand the past of cultures other than our own. This book is a synthesis of archaeological findings from Mexico and Guatemala and an interpretation of them. It is built on the work of predecessors who worked in the prehistoric past, sixteenth-century chroniclers, and several generations of more contemporary scholars. It is up to the readers to judge how well I have succeeded in bringing together the finds of the past and the success of my interpretation of these findings. My colleagues and predecessors have my gratitude, but I accept responsibility for any shortcomings of this book.

Thanks are due to Donald Brockington, Ronald Spores, David Grove, K. V. Flannery, Wigberto Jiménez-Moreno, Jacinto Quirarte, and all my colleagues not mentioned in the seminars on the origins, collapse, and settlement patterns of Maya civilization sponsored by the School of American Research. I am deeply grateful to Douglas Schwartz, Director of the School of American Research, for the exciting opportunities afforded to examine these questions. Special intellectual debts are owed to G. R. Willey, Demitri Shimkin, and W. T. Sanders.

Franklin Graham, then of Little, Brown and Company, encouraged me with the production of the first edition. Critical appraisals were made then and later by George Cowgill, Barbara Price, Margaret Bond, and George Stuart and have been very useful and stimulating. David Grove was especially kind in writing long and thoughtful letters answering my questions about the new perspectives on the Olmec and their contemporaries. All of these have gone beyond the call of duty in pointing out systemic and factual errors as well as new information that should be added. If at times I have not taken their advice, the decision has not been lightly made. John Paddock carefully read the material on Oaxaca for the first edition and wrote a detailed commentary on it. Davie Kelley helped me greatly with matters of hieroglyphic writing, calendrics, and other arcane matters. I thank them both.

The late Robert Heizer furnished badly needed photographs. Joseph Campbell kindly aided with the pronunciation guide, Clemency Coggins

with a problem in hieroglyphs, and Frank Saul with one in physical anthropology. Special thanks go to Nancy Reid and Olivia Rodriguez, who prepared the finely drawn art. The hieroglyphic and linguistic section of this edition was discussed and critiqued by Robert Spencer to my great advantage. Frank and Susan Ambuhl copyread about two thirds of the manuscript and turned up an embarrassing number of errors. Jane Adams also keyboarded sections of this edition and copyread endless reams of material. I am in debt to all of these friends and colleagues.

As with any such book, this is the expression of an intellectual adventure. For me, the adventure has spanned forty years. The late Eduardo Noguera introduced me to fieldwork in Mesoamerican archaeology, and I remember him fondly. To E. M. Shook, the late Linton Satterthwaite, and W. R. Coe, who gave me my first Maya field experience, I am deeply obliged. E. A. Hoebel, R. S. Spencer, and Elden Johnson at the University of Minnesota encouraged me in the beginning stage of this project. J. W. Wagener of the University of Texas at San Antonio performed the same service for the second edition. I hope that the result does not disappoint them.

Finally, my wife and children sustained me in this endeavor, as in much else.

Third Edition

One of my colleagues quipped to me when I told him that I was doing a third edition of my book: "Do you think you'll get it right this time?" Actually, that is a good question, and I hope that the improvements, new information, and some smoothing of the language make it a better book. Most of all, however, this edition aims at straightening out old misunderstandings, adding new understandings and information, and giving some of the excitement of being in a field that continually expands the comprehension of the great cultures that existed hundreds of years before the arrival of Europeans in Mesoamerica.

As always, this book builds on the extraordinary efforts of predecessors and colleagues who have contributed, both directly and indirectly, to whatever quality it may have. Those to whom I owe a great deal sometimes prefer anonymity, but many have come forth with corrections large and small, and I am grateful to them all. In addition to those mentioned in the prefaces to the first two editions, I owe a great deal to William R. Folan for his commentary on the Classic Maya chapter. Fred and Palma Valdez went over an early draft of the chapter on first immigrants to my great benefit. George Cowgill steered me clear of some gaffes and corrected other problems in the section on Teotihuacan. David Grove answered questions about the Olmec finds, and one scholar, Carl Wendt, was of considerable help in sending me a copy of his dissertation on the household

excavations he had done at San Lorenzo. Kent Flannery and Joyce Marcus have consistently and kindly kept me up to date on various topics in Mesoamerican research by sending copies of papers and drafts of papers. Vernon Scarborough and Nicholas Dunning have pushed a great deal of information and explanation my way. Hubert Robichaux provided a photo and corrections, for which I am most grateful. Two anonymous reviewers pointed out areas to be improved, and one even included a list of specific errors to be corrected. To all of these colleagues and others not mentioned, I am grateful and humbled by their generosity. If I have not always taken their suggestions, it is no reflection on them. As the reader will know, the author bears the ultimate responsibility for the work. To my wife and family, as ever has been the case, I owe untold debts for their patience and support through years of fieldwork and writing.

PREHISTORIC MESOAMERICA

CHAPTER 1

INTRODUCTION

There were writers from each branch of knowledge. Some composed the historical annals, setting in order the events that took place every year, stating the day, month, and hour. Others recorded the genealogies and descendants of the kings, lords, and personages of high lineage; they would make note of those who were born and cancel the dead. Others painted the limits, boundaries and border stones of the cities, provinces and villages, and of the fields and plantations, indicating their owners. Yet others made records of the laws, and the rites and ceremonies performed in pagan times. The priests made records regarding the temples of the idols, and of their idolatrous doctrines and the feasts of their false gods and their calendars. And finally, there were philosophers and wise men among them who recorded in picture writing the sciences they were versed in.

Ixtlilxochitl in Bernal 1964, xxv

These writings would have enlightened us considerably had not ignorant zeal destroyed them. Ignorant men ordered them burned, believing them idols, while actually they were history books worthy of being preserved instead of being buried in oblivion as was to occur.

Durán 1971, 396

THIS BOOK WAS written to fill the void created by the unfortunate loss of native records, but it also deals with matters that presumably were never thought of by native historians and philosophers of Mesoamerica. The goal is simple: to present an up-to-date interpretative synthesis of Mesoamerican prehistory. It is intended for the student as well as for the curious person who has somehow become intrigued with the past native civilizations of Mexico, Guatemala, Belize, Honduras, and El Salvador.

The book is organized to aid the reader in understanding those alien and destroyed cultures that form a part of the New World's heritage. The first immigrants to the New World came from what is now northeastern Siberia twenty to thirty-five thousand years ago. They moved through a world still locked in the grip of the last ice advance and into increasingly warmer zones to the south of the glaciers. Many generations and thousands of miles later, their descendants laid the economic basis for civilization,

beginning the tinkering with plants that led to their ultimate control by humans. From that point on the story continues to run from earliest to latest until we consider the Aztec and their contemporaries in the final chapter. In the first edition, I presented the Aztec first and then reverted to a sequential review. This was based on some twenty-five years of teaching Mesoamerican archaeology at the college level. The approach was more successful for me than the standard arrangement and had the advantage of dealing initially with a Mesoamerican civilization seen in full tide by the first Europeans in Mexico. It also served to introduce in this more familiar context some of the archaeological and anthropological concepts on which presentation of the later material depends. This approach is still possible if the instructor wishes to assign the Aztec chapter first and then, afterward, work his or her way forward from chapter 2. The presentation is aimed not just at dusting off the ancient pots and pans but at reconstructing ways of life and making functional interpretations based on archaeology. The reader should thus have an impression of the earlier cultures that will be akin to that given for the Aztec, even if lacking in the wealth of historical events and personality.

This book, then, is an interpretation of the technical archaeological data. It does not aim at encyclopedic completeness of coverage. It is an interpretation that can be documented, however; it is not made of whole cloth. When there are theoretical alternatives, these are usually indicated and discussed and the evidence given.

An appendix deals with technical matters of chronology, spatial divisions within Mesoamerica, and definitions of sociopolitical organization. These subjects have been placed in a separate section in order not to disturb the flow of the book, but the student and professional will probably want to know, for example, the basis on which I have categorized the Late Preclassic Maya and Formative Olmec as "primary states."

Several themes run through the book. First, the native civilizations of Mesoamerica are worth knowing about not just because they are exotic examples of human behavior but also because their historical and cultural experiences are worth considering. They faced universal problems of human existence and either solved them or failed. We can learn from their successes and failures if we will. Second, Mesoamerica was a sphere of cultural interaction. Part of what made civilization possible was the interaction among the diverse cultures that flourished there. The varieties of culture and their interrelationships through time and space are fascinating, involving not only economics and militarism but also religion and ideology; interaction took place along all of these lines. Occasionally, personality and character break through the flow of historical process, especially when we can read some of the texts left to us in the form of native writing systems. Third, civilization, in the sense of greatest complexity and sophistication

of development, was in the main an elite-class phenomenon. Fourth, there are continuities between the deep past and the Indian cultures of the colonial and modern worlds. Much that we see in Mexico and Guatemala today is related to the historic past, although the ties are usually unrecognized. The richness and diversity of the native cultures of Mesoamerica are attractive to us of the West if only because they document the endless variety of forms in which human behavior, society, and artifacts occur. I hope that the reader can gain an understanding of some of the Native American cultural experience and thereby also better understand that of our own tradition.

A Brief History of Mesoamerican Studies

As varied as is the subject matter of this book, the sources of information are, if anything, even more various and colorful (Bernal 1980). The history of Mesoamerican studies can formally be divided into five periods.

The first period is that of the Spanish Conquest and immediate aftermath of approximately fifty years, 1519–70. Hernán Cortés himself wrote five famous and lengthy letters to Charles V reporting on the progress of the exploration and conquest of Mexico (Cortés 1963), and many others did the same over the next forty years or so. Francisco de Montejo, conqueror of Yucatan, wrote official reports and documents, for example (in Chamberlin 1948). Several conquerors wrote memoirs, the most famous being Bernal Díaz del Castillo's account (1968). Cortés evidently dictated his autobiography and story of the conquest to his chaplain in Spain, Francisco López de Gómara (1964). Even the "Anonymous Conqueror" left us his tale (1917). All of these personal and eyewitness stories contain substantial quantities of information on native life and civilization, although they are often frustratingly vague and are also frustratingly spotty in coverage and distribution.

Formal compilations of information were begun shortly after the conquest by Father Andrés Olmos, who set the standards for later chroniclers. Olmos developed the system of collecting all the native books available to him, having them translated, and supplementing them by systematic interviews with persons of high and low estate who had lived before the Conquest. Unfortunately, the account by Olmos is lost, but Father Bernardino de Sahagún followed the same research methods, as did many other illustrious writers, including Landa, Durán, Burgoa, Ixtlilxochitl, Tezozomoc, and, much later, Boturini. In a sense all of these men were doing ethnology and ethnohistory, using participant observation when possible and documents where they existed. Durán grew up in Texcoco across the lake from Aztec Tenochtitlan, and in the days of his youth there were many Aztec buildings still in use or at least visible. All of those who were priests wrote to provide guides to aid in the conversion and further instruction of Indians and to

guard against unrecognized heresy. The Spanish bureaucracy provided much information on the working of native society, especially that of the Aztec, since they found these data to be of practical administrative use. The first viceroy of New Spain (Mexico), Antonio de Mendoza, had the *Codex Mendoza* compiled as a guide to the amounts of tribute that the Aztec had received from their conquered vassals and what the Spaniards therefore might reasonably expect.

A series of documents that fall into this and later periods are those written by natives, or mestizos (people of mixed blood), who, having taken an interest in their own origins and illustrious pasts, gathered as much information as they could. Many of these documents are written in native languages. Some of them are frankly attempts to save knowledge and information that the Spanish would not have approved of, being ritually important and definitely non-Christian. The *Popul Vuh* (1971), *Rabinal Achi* (Carmack 1973), and the books of *Chilam Balam* are all examples of this category. Many are also self-serving in the sense that they are attempts at bolstering the social and economic statuses of survivors of the native elites. Withal, and despite the chaotic nature of the material and the difficulties, these documents make up an immense treasure house of information that grows in value each year as it is confirmed, elucidated, or amplified by further historical and archaeological work.

A second period is that from 1570 to 1790. The documentary data from this period include not only some from the above categories but also more formal administrative questionnaires. These questionnaires are known generally as the *Relaciones Geográficas* (reviewed in HMAI, 12). There are two main sets, the earliest being the best, dating from 1578 to 1580. The second set dates from the dying days of the Spanish Empire, 1742–92, and is much less complete. Supplemented with accounts of ecclesiastical visits by bishops to native towns (for example, Father Cortés y Larraz of Guatemala), native lawsuit records (for example, the “Mapa de Tezoacoalco” from Oaxaca), and miscellaneous papers, the last two hundred years of Spanish colonial rule produced a remarkable amount of information in spite of being further removed in time from the native cultures with which it dealt.

Toward the end of the Spanish colonial era, the third period of Mesoamerican studies began—that of exploration, broad scholarly participation from several fields and individuals, and awakened national interest within the various former colonies. Antonio del Río and Guillermo Dupaix were Spanish army officers commissioned to investigate the reports of ruins in Mexico. Del Río went to the newly discovered ruins of Palenque in 1787, and his report was published in 1822, stimulating further exploration. Dupaix, a retired Royal Dragoons officer, made a good first survey of some of the major archaeological sites in Mexico. By roundabout circumstances, his

report was published in the Kingsborough volumes, which were printed from 1830 to 1848 (Brunhouse 1973).

As the Spanish Empire crumbled and the former colonies achieved independent national status, they came increasingly into contact with the outside world. After centuries of purposeful isolation from non-Spanish Europe, suddenly the remarkable features of the Americas became known. The first activity stimulated by these curiosities created collections of documents. An Englishman, Lord Kingsborough, beggared himself in collecting and publishing many of these materials in a hand-colored edition of sumptuous size and cost.

Scarcely a generation after the achievement of independence came the fourth period of scholarship, led by a remarkable group of historians (Cline 1973). They revived the tradition of document collection and comparative studies that had lapsed after the sixteenth century. José Ramírez, Joaquín Icazbalceta, Alfredo Chavero, and Francisco Paso y Troncoso all made collections of immense historical value during the nineteenth century. Manuel Orozco y Berra, however, was the principal person to attempt to apply the newly developed sophistication in historiography to these collections, and his *Historia Antigua* is a noteworthy achievement. He attempted a first synthesis of what was known about the pre-Columbian cultures as part of this magnum opus. These collections, explorations, and the resultant studies of the natural and cultural wonders of the Americas stimulated a series of more systematic explorations that led directly to the development of present-day Mesoamerican archaeology.

The first great explorers were John Lloyd Stephens, a New York lawyer, and his colleague, Frederick Catherwood, an English architect. These men explored the Maya Lowlands and, with Catherwood's superb drawings, presented an extraordinarily accurate picture of a largely unrecorded ancient civilization. They published their travels in four volumes that were best-sellers in their day—1841 and 1843 (Stephens 1949, 1963).

Teobert Maler worked in Guatemala and Yucatan for the Peabody Museum of Harvard University in the late nineteenth century, recording ruins and texts by photography and producing a series of excellently illustrated volumes (Wauchope 1965). A. P. Maudslay's monumental archaeological supplement to a giant English work on the biology of Central America concentrated again on the Maya area. Brasseur de Bourbourg discovered many native language texts, including the *Popol Vuh* (Mace 1973). W. W. Holmes, an American anthropologist, traveled through most of Mexico and northern Yucatan in the 1890s making accurate drawings and descriptions of the ruins. Leopoldo Batres, an official in charge of antiquities under Porfirio Díaz, did the first excavation at Teotihuacan in preparation for the celebration of the Mexican centennial of independence from Spain. However, the quality of his work is best left uncommented

on, especially when compared with the work of others of the period. Désiré Charnay traveled extensively and dug occasionally into places such as Tula and Teotihuacan in the 1870s and 1880s and also produced a well-illustrated book.

None of the above explorers were trained archaeologists; indeed, there was hardly such a profession as archaeology yet in existence. Certainly none of them had available the kinds of historical and ethnohistorical information that are routinely consulted today. Most of that data lay undiscovered and untranslated in archives, in private collections scattered over Europe, in obscure Latin American parish churches, and in other places equally difficult of access. The Mexican historians had started to publish some of the documents, and Kingsborough earlier had put a great deal into print (alas, somewhat inaccurately). It remained for the great Eduard Seler to begin the systematic comparative studies of chronicles, native documents, and archaeological remains. Stephens had made a start in this direction, but Seler, with his intense and profound scholarship, was able to produce a magnificent series of commentaries on the religious picture manuscripts of the Borgia group of codices from central Mexico. He explained the divinatory purposes of the native calendars and other complexities of native civilizations (Nicholson 1973).

At about the same time (late nineteenth and early twentieth centuries), Ernst Förstemann, J. T. Goodman, and Charles Bowditch were independently working out the basic features of the Maya arithmetical and calendrical system (J. E. S. Thompson 1950). Indeed, much of exploration done during the early twentieth century was directly stimulated by the need to record more texts and sculptures in aid of this decipherment work. David Kelley (1976) has written a critical history of these developments.

Archaeology, developed as part of the physical and natural sciences in Europe and as part of anthropology in the United States, became a field study in its own right. At the point during the early twentieth century when all of these traditions began to combine into a coherent focus on native cultures, both prehistoric and ethnographic, Mesoamerican studies came into being. If one has to pick a date at which archaeology began to assume its modern form as a part of this intellectual development, 1910 is a likely selection. Seler, together with Alfred Tozzer of Harvard and Franz Boas of Columbia University, founded the School of American Studies in Mexico City in 1908, with Seler as its first director. Boas, the founder of modern anthropology in America, became director in 1910 and recruited Manuel Gamio as his associate.

Gamio had already done extensive excavation in the sites around the Valley of Mexico, but, in the style of the time, it was more in the nature of digging for things than for information. In 1910, probably under Boas's influence, he suddenly began to dig by metric stratigraphy, thus introducing

a fundamental field method into New World archaeology and also setting up a ceramic sequence for the Valley of Mexico. Gamio already had intellectual ties with the Mexican historical tradition through his chief, Nicolás León, director of the National Museum, who had been a member of the group of nineteenth-century Mexican historians mentioned above. Gamio continued to prepare himself through graduate studies at Columbia and then returned to Mexico to put into practice one of the most far-reaching plans for integrated anthropological research ever conceived. He proposed to study every aspect of several major regions of Mexico.

The Teotihuacan Valley was the first region to be selected, and a government project began in 1917 with Gamio as director. The project's breadth of conception, amazing for its time, comprehended ethnographic studies of the modern populations, historical studies of the colonial period, and archaeological studies of the prehistoric past. These were supplemented with geological and geographical projects. Gamio's work was interrupted by personal political troubles, and after he returned to Mexico in 1929 his interest was concentrated on problems of integration of modern Indian populations into the national fabric, remaining so until the end of his life. He had shown the way, however, in prehistoric studies.

In the Maya area from about 1908 until 1914, S. G. Morley was working under various auspices, recording Maya glyphs. In 1914 Morley persuaded the Carnegie Institution of Washington to undertake a long-term program of intensive research that would deal with selected sites from all known periods. From 1914 until 1958, when the program was abruptly abolished by a jealous administrator, the Carnegie group, led by A. V. Kidder, Sr., worked at many Maya lowland and highland sites in Guatemala, Mexico, and Honduras, establishing the basic outlines of Maya prehistory and providing the critical mass of data needed to begin to attack the most sophisticated questions (R. E. W. Adams 1969). The Carnegie group produced a monumental series of publications, packed with data and with excellent illustrations. Their standards of scholarship and field techniques were very high.

Kidder was by then perhaps the preëminent person in American archaeology and an innovator in field-excavation techniques developed in his work at Pecos in the U.S. Southwest. He carried these methods into the Maya area and developed them further. His ability to synthesize and to carefully, if conservatively, theorize on the meanings of the data was a great part of his scholarly strength (Willey 1967). He has been stringently criticized for not having been explicit enough in his theoretical constructions (Taylor 1948), but it is noteworthy that he is still frequently cited.

Alfonso Caso began his remarkable professional life in 1927 and continued his active scholarship until his death in 1970. Caso's amazing luck, combined with a powerful intellect and a gift for lucid analysis and writing,

made him outstanding in his field. He focused early on the Valley of Oaxaca and began work at Monte Alban near Oaxaca City early in the 1930s. His concurrent studies in calendrical matters carried on the momentum built up by Seler in the decipherment of writing systems. To round off his career, he produced a remarkable series of commentaries on the historical-genealogical books of the Mixtec.

Caso and Gamio were the founders of modern anthropology in Mexico, and their intellectual descendants carry on today. Likewise, the Carnegie group in the Maya area formed a tradition that has influenced workers coming afterward in that field.

The work of George Vaillant in the Maya Lowlands and later in the Valley of Mexico was of great importance in establishing basic chronologies. Indeed, during the 1930s and 1940s the major issues of Mesoamerican archaeology were largely tied up with time-space relationships. Vaillant, however, was somewhat ahead of his time; he was willing to wring the data for more implications than most of his contemporaries. His gift for large-scale synthesis and his almost poetic feeling for the ancient cultures of Mexico are nowhere better shown than in his book *Aztecs of Mexico* (1962). Vaillant, with Matthew W. Stirling, Alfonso Caso, and Miguel Covarrubias, was one of the first to recognize the importance of the series of finds on the Gulf Coast and in the central highlands that ultimately were shown to be traces of the earliest civilization in Mesoamerica, that of the Olmec. His tragic death in 1945 cut short what would have undoubtedly been further major contributions.

In the fifth and most recent period of Mesoamerican studies, integration of the various fields seems finally to be taking form. Since about 1960 it has become evident that the new generations of field workers are not satisfied with simply sorting things out in terms of time and space but also demand that data be collected and interpreted to deal with whole societies. Culture process—the study of cultural change—has become the major objective of research in this area. More sophisticated theory derived from cultural ecology, general systems theory, world systems theory, comparative history, and general anthropology has stimulated interpretations that are testable in the scientific sense. A certain daring and willingness to hypothesize from data is more evident in this younger group.

Present-day Mesoamericanists are a much more heterogeneous collection of people than those who came before. From a field largely dominated by Mexican and U.S. scholars from a few institutions, the effort has become one enlisting many researchers from U.S. state universities as well as from Ivy League schools. Further, the Mexican national effort has deepened in the numbers of people involved and the sophistication of their training. English, German, French, and Slovenian research groups have appeared and are making significant contributions. Guatemala, Belize, and Honduras

now have small but active research groups that are growing in professional skills. Theoretical systems such as cultural ecology and field techniques such as settlement pattern studies have taken hold throughout the field. The Selerian tradition continues, as does the Mexican ethnohistorical school of studies, but these are now much more integrated into other branches of scholarship.

Fields of study that once were auxiliary have become much more important. Physical anthropology has always contributed to archaeology, but now it is providing crucial data and interpretation. For example, the dental studies of skeletons done by Christine White are leading to the possibility of specifying where a person was born and grew up. Frank Saul's long-term studies of skeletons have enabled him to detail health problems of ancient populations and even to suggest their diets. Eric O. Callen's work with human coprolites has enabled him to become even more specific, to the point of diagnosing the components of specific meals. The epigraphers (decoders of ancient scripts) have come into their own with breakthroughs in most fields of ancient Mesoamerican writing. This has progressed to the degree that many of them are now dealing more with linguistics and specified meanings of words than just with the decipherment of the general meaning of texts.

As will be seen, we have not yet, and likely never will, achieve a completely satisfactory understanding of Mesoamerican prehistory. (Indeed, our colleagues in European history seem dissatisfied with their control over that long-established field.) The work of our illustrious predecessors who pioneered in the field has made it possible for us to set up and test complex models of social, historical, and ecological dynamics by amassing the vast amounts of requisite information. The field continues to develop new data in an exponential manner. As much work has been done in the past fifty years as was done in the preceding one hundred and fifty. However, archaeological data are unique and limited and are being rapidly destroyed by the "ignorant zeal" not of religious enthusiasts this time, but of zealots of development and aesthetic admirers. The archaeologist today engages in a desperate race with bulldozer, dam builder, touristic developer, and antiquity hunter to retrieve and record the ever-shrinking data that will aid in understanding the unique civilizations that developed in Mesoamerica.

Geography and Culture

One of the most formidable barriers to understanding the Mesoamerican past is the names, which at first glance may seem to non-Mesoamericans bizarre and unintelligible, let alone forgettable. Frequent reference to the maps in this book or elsewhere can help. Many centers or regions had similar or identical names. Some of this confusion comes from the fact that many names are descriptive. (Chapultepec means "Grasshopper Hill.") A

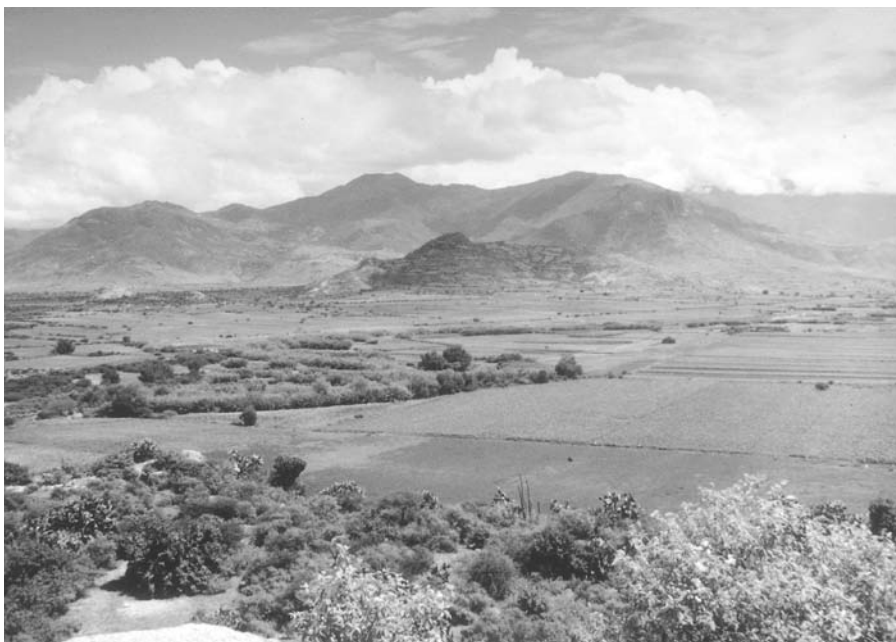


Fig. 1-1. Highland Mesoamerica. A portion of the Valley of Oaxaca, in the Tlacolula branch, looking northeast from Yagul.

very important late Mixtec center in coastal Oaxaca was named Tututepec. But there was also the Huastec center of Tututepec far to the north in Hidalgo. Both names mean “Hill of the Bird.” To further complicate matters, during the sixteenth century many non-Aztec place-names were translated into Nahuatl, creating a more apparent uniformity than was really the case. Tututepec’s Mixtec name was originally Yucu dzaa, which means the same thing: “Hill of the Bird.” Historical charisma was another reason for duplication of names. The great Toltec center of Tula (or Tollan) was commemorated by having its name applied to a number of smaller and usually less important places. The matter is more than a technicality. The cultural differences among places with the same name were often as great as those that exist between Paris, France, and Paris, Texas.

The geographical features of each major cultural area will be discussed as we explore each one in the text. However, there are some general features that are important aids in understanding the ecological stage on which the Mesoamerican drama was played out. The modern nation-states of Mexico, Guatemala, Belize, Honduras, and El Salvador occupy the space

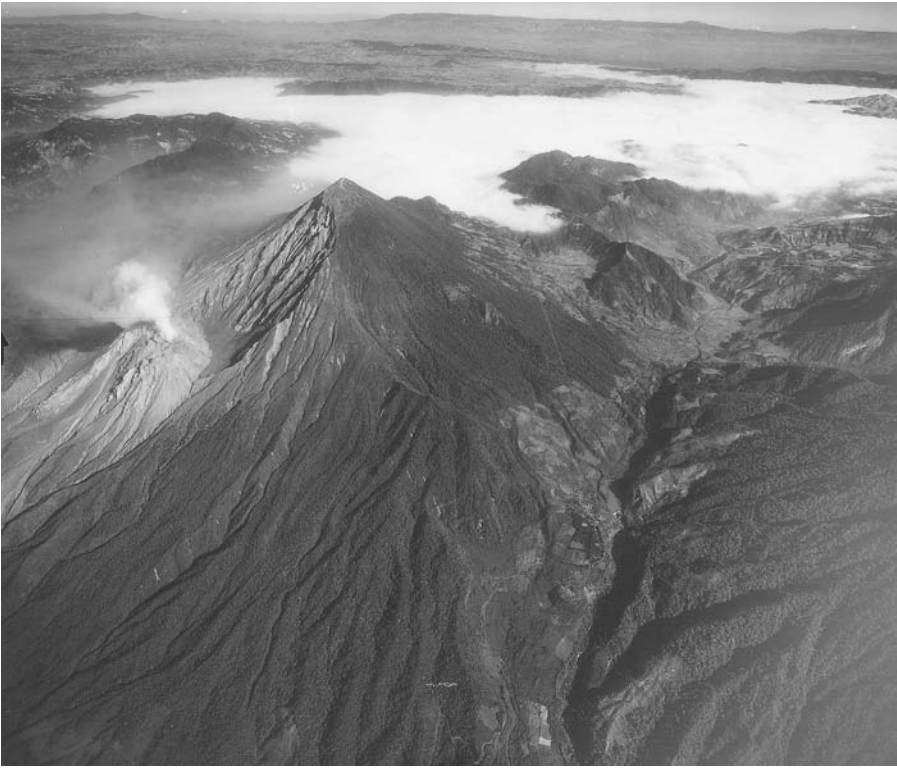
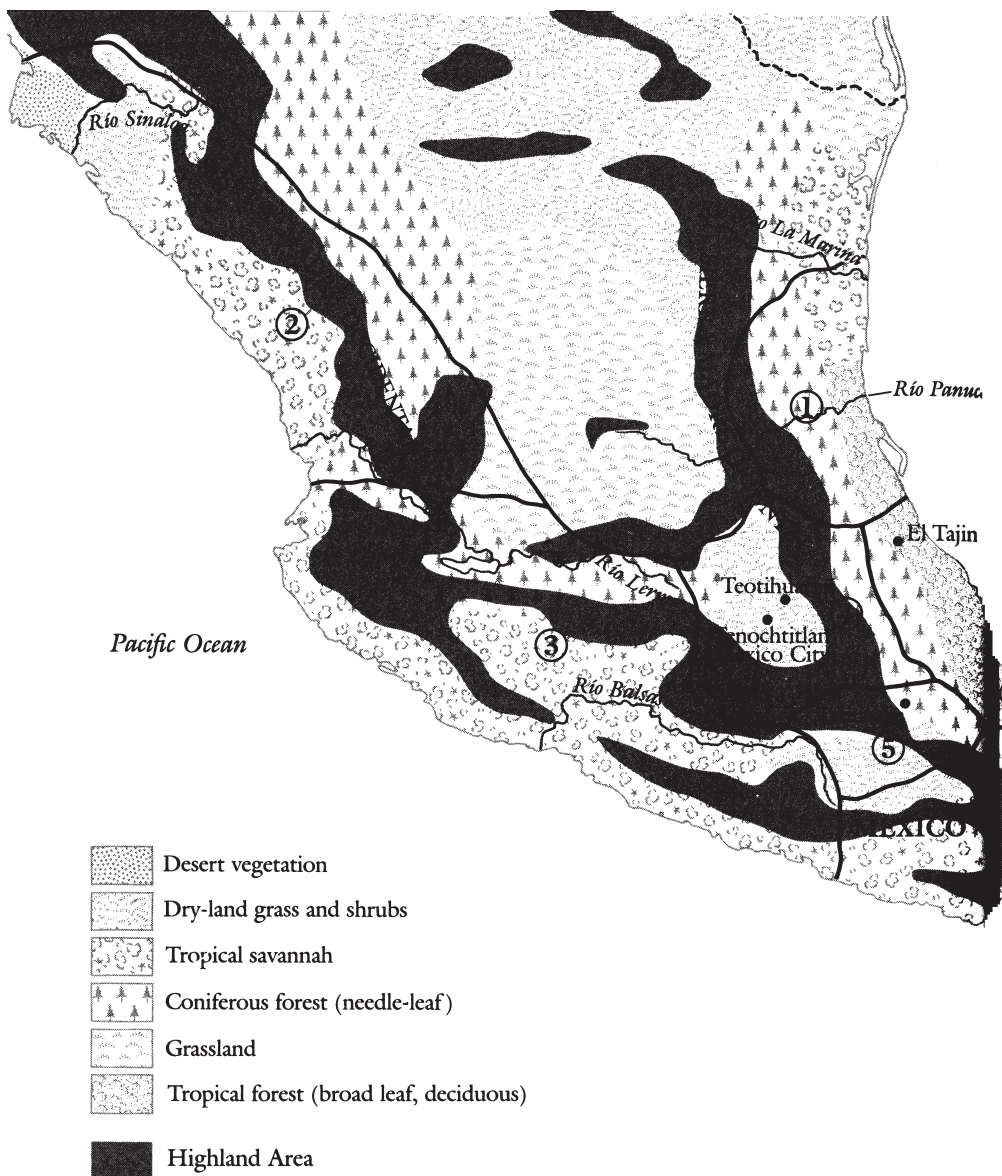


Fig. 1-2. Aerial view looking northeast over Volcán Santa María, near Quetzaltenango, Guatemala. (Courtesy Edwin M. Shook)



Fig. 1-3. Highland Mesoamerica. Haystack hills and a gorge in the northern Maya Highlands of Guatemala.



Map 1-1. Physiographic and culture areas of Prehistoric Mesoamerica.



Fig. 1-4. Highland Mesoamerica. Native housing of thatch-and-pole construction on the road near Tactic, Guatemala.

once controlled by various native high cultures (map 1-1). Mesoamerica is thus a culturally defined area; its distinctive features are outlined below. The northern border of distribution of this culture area is roughly at the Sinaloa River in the northwest and the Soto la Marina River in the northeast. A dip in the middle excludes the central deserts of Chihuahua, Nuevo León, and Coahuila. This desert zone was known to ancient Mesoamericans as the Gran Chichimeca, and civilized life existed only fitfully and fragiley in it. The southern frontier runs from the mouth of the Ulua River in Honduras, angling south in Salvador and ending at the Gulf of Fonseca on the Pacific Coast. It was a great deal more stable than the northern frontier. These borders frame an area of about 1,015,280 square kilometers (392,000 square miles). The borders fluctuated through time, and the frontiers given here represent the maximum extensions of Mesoamerican culture.

Extraordinary diversity compressed into a relatively small space characterizes Mesoamerica. The surface configuration is broken up by the great mountain ranges that are part of the circum-Pacific volcanic ranges. The resulting compartmentalization of ecology has caused complex patterns of climate, vegetation, and animal life. Robert West notes that rainfall and altitude are the most crucial factors in determining the climate of any given region (1964). All of this diversity, both ecological and cultural, in the past has been organized into two polarities—highland and lowland.

However, as W. T. Sanders and Barbara J. Price have pointed out, zones from both these categories were often economically combined into what can be called symbiotic regions (1968). Moreover, the characteristics once thought to distinguish the two ecological extremes have blurred. For example, new information has shown that permanent intensive agriculture was as much an attribute of the lowlands as of the highlands. Compressed ecological diversity in Mesoamerica allowed cultural evolution to take place, but similar and widespread cultural forms were needed to organize Mesoamerica in order to realize the maximum potential that it eventually achieved. Interaction among cultures adapted to very different ecological areas is a constant and recurring phenomenon in Mesoamerican prehistory. Where once we thought of culture areas as unchanging and stable, the definition can now be changed to one of geographical zones within which a distinctive cultural focus developed and which expanded and contracted according to political and natural fortunes.

The following are the major cultural areas of Mesoamerica; they are both major physiographic zones and the centers of development of major cultural patterns.

1. The Northeast: the Huasteca
2. Northwest Mexico
3. Western Mexico
4. The Mesa Central: the Basin of Mexico and the surrounding valleys of Morelos, Puebla, and Toluca
5. The Puebla-Oaxaca Highlands
6. Oaxaca: Central Valley and Pacific Coast
7. The Isthmian zone: Gulf Coast Veracruz, Tehuantepec Isthmus, and the Guatemalan Pacific Plain
8. The Maya Lowlands
9. The Maya Highlands: Chiapas and Guatemala

Mesoamerica as a Cultural Concept

Walter Lehmann in the 1920s and Paul Kirchhoff in 1943 developed the concept of Mesoamerica as a large area of interaction with a basic cultural unity. These scholars depended heavily on historical and ethnographic traits in their definitions. Later, Gordon R. Willey, Rene Millon, and Gordon Ekholm reworked the concept to make it operational for archaeology (1964). In turn I have made adjustments in definition to take account of the latest research.

Basic agricultural technologies tended to be combinations of extensive and intensive in both the lowlands and the highlands. Regional crop lists always included varieties of the major carbohydrate grain, corn (maize), as well as squashes and beans. However, inventories varied wildly in regional plants such as cacao, avocados, tropical fruits, and many sorts of beans and

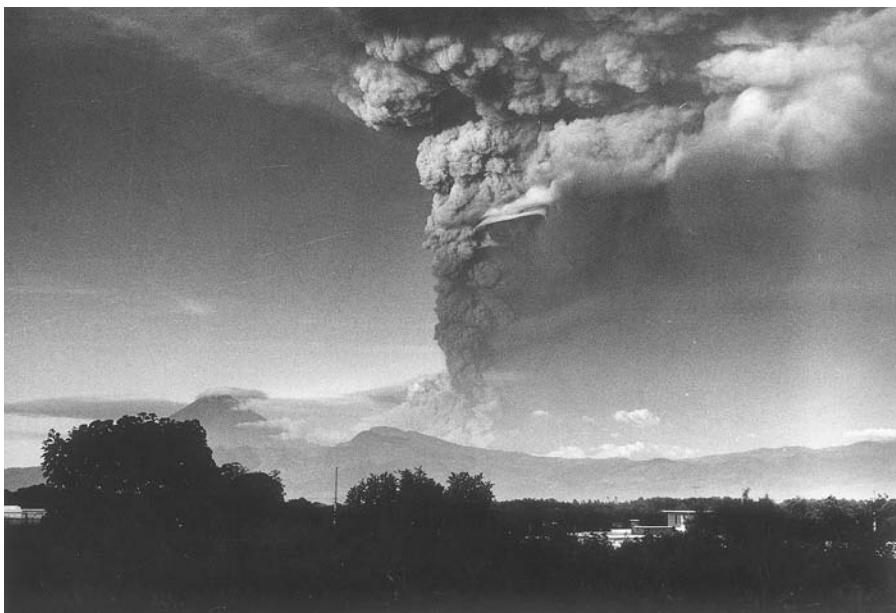


Fig. 1–5. Highland Mesoamerica. Eruption of Volcán Fuego near Antigua Guatemala in 1962.

other vegetables. Settlement patterns, on the other hand, tended to be dispersed in the lowlands and nucleated in the highlands. However, again, this distinction was a matter of degree.

Stone Age technologies were common to all Mesoamerican cultures. Stone tools could be remarkably uniform and precisely made, as demonstrated by the studies at Colha, Belize (Shafer and Hester 1983). Metal was not ordinarily used for utilitarian purposes, although copper, silver, and gold were all in circulation after about A.D. 1000. Movement of goods and people was largely by canoe or by foot. Mesoamerican cultures lacked the wheel, possessed few useful domesticated animals, and did not use the true arch. There were no draft animals. A person can move approximately three quarters of his own weight for a limited distance. On water a person can move about forty times his own weight. Therefore, Mesoamericans tended to avoid moving bulk cargoes overland.

Organization of society and economy centered on the agricultural village. Aristocratic leadership controlled all affairs of import through civil servants. Merchants, warriors, and artisans formed special social classes ranking above the main class of farmer-laborers. Temple-elite residential centers in both highlands and lowlands functioned as headquarters for the elite and bureaucratic classes, both initially and later when the centers had been transformed



Fig. 1-6. Highland Mesoamerica. Native housing of thatch-and-pole construction in the Cotzal Valley, Guatemala.

into varieties of urban communities. Market systems were integrated with the various population centers and furnished the sinews binding together the symbiotic regions. The dispersed and nucleated centers, towns, cities, and metropolises all were built of stone, plaster, and mortar. A variety of architectonic forms were expressed in these materials, and they were decorated with art styles that were intimately connected with the elite classes. Other manifestations of hieratic art appeared in elaborate pottery, murals, sculpture, and jewelry. After the establishment of state-level organizations, the city-state was the basic and stable unit, combinations of which made up the larger political structures of kingdom and empire. In some areas, especially the Valley of Mexico, and in parts of the Maya Lowlands, regional states became a dominant or reappearing form.

Intellectually, there were certain cross-cutting philosophical and religious principles. One set was bound up with the fatalistic cosmologies of the Mesoamericans. Man lived in a hostile world with capricious gods. Mathematics, hieroglyphic writing systems, astronomy, and calendrical systems were all tied to these philosophical tenets. Two ritual games were widely played, the ball game and the *volador* ceremony. Both still survive in isolated regions.

Regional diversities existed within these and other characteristics that bound Mesoamerica together. Willey has characterized Mesoamerica as a vast diffusion sphere. That is to say, whatever happened of importance in one area sooner or later had some effect on most of the other areas.



Fig. 1-7. Lowland Mesoamerica. Jungle scene at Tikal, Guatemala. (Courtesy Alexandre Nikouline)

Prehistoric Development

Let us now quickly survey the main features of Mesoamerican prehistory by stages of development. These stages will be used in organizing the material in each of the following chapters. Again, I refer to Willey, Millon, and Ekholm's synthesis (1964). However, I have made several modifications to that evolutionary terminology. First, the Lithic stage has been lengthened considerably to include what now seems to be good evidence for much earlier human occupation than formerly appeared likely. Second, the now commonly used term *Archaic* has been adopted. Third, the term *Formative* has come to be used interchangeably with *Preclassic*. This alternative has nearly as many problematic implications as the older and frequently used term, but it seems to have become more common usage, and therefore I have chosen to adopt the newer label. Finally, I have looked for an acceptable new term that would describe what is now a period of early civilizations in the Tabasco Lowlands, Maya Lowlands, and South Coast and Highlands of Guatemala. The best I can do is to call it the period of *Early Eastern Civilizations*. The new period is defined below.



Fig. 1-8. Lowland Mesoamerica. Jungle waterhole covered with water plants, near Kohunlich, Campeche, Mexico.



Fig. 1-9. Lowland Mesoamerica. Lake Peten Itza, Guatemala.



Fig. 1–10. Field archaeology. A palm-thatched archaeological field laboratory at Altar de Sacrificios, Guatemala.

There is a “value-free” chronological system espoused by a group of archaeologists who work mainly in the Valley of Mexico (Wolf 1976). This is a scheme that conceptually derives from one developed for the Andean area. It uses terminology such as First Intermediate phase, Second Horizon, and so forth. I have chosen also to avoid this system in dealing with Mesoamerica as a whole, because of its technical nature and complexity and because it is so evolutionarily tied to the Valley of Mexico.

Lithic (25,000–7000 B.C.). Humans filtered into the New World as immigrants in an Upper Palaeolithic state of culture and gradually developed a radically distinctive set of New World variations. The earliest certain settlers in Mesoamerica now seem to date from about 25,000 B.C., but possibly there were people there as early as 40,000 years ago. Migrations into the area may have been along the coast as well as overland.

Archaic (7000–1500 B.C.). Transitions from hunting and gathering took place during this stage, and agricultural village societies were established all over Mesoamerica by 1500 B.C. except in the Maya Lowlands. The major events were the beginning of sedentary life based on intensive hunting and gathering patterns, with a shift to agriculture and all the consequences of that change.



Fig. 1–11. Field archaeology. Excavation of two associated burials and an interior terraced platform at Altar de Sacrificios. Burial 96 was located in the upper terrace and Burial 128 in the lower terrace. (Courtesy Ricardo Mata)

Formative (1500 B.C.–A.D. 150). Slow and experimental development of most of the early civilizations is based on cultural elaboration that took place during these 1,650 years. A number of other precocious Formative cultures in the central highlands are in existence and interact with the Olmec. By A.D. 150 most of the features defining Mesoamerica and distinguishing it from North and Central American cultural areas were in existence.

Early Eastern Civilizations (1200 B.C.–A.D. 200). This period introduces a set of cultures that are confined to the eastern zone of Mesoamerica and include the Tabasco Lowlands, the Trans-Isthmian zone, and the Maya area. The Olmec seem to have been the earliest florescence and appear near the beginning of the period, although there are possible predecessors on



Fig. 1–12. Field archaeology. Excavation of the mosaic serpentine mask at La Venta, Veracruz, Mexico, by the late Robert Heizer and associates. (Courtesy Robert Heizer and John A. Graham)

the Pacific Coast. The Chiapas-Guatemalan Pacific Coast undergoes a remarkable transformation beginning about 800 B.C., as do the southern highlands of Guatemala. In the Maya Lowlands, there is early complexity (ca. 600 B.C.) in religion and politics centered on the Mirador Basin sites, which are in the heartland of the area. As will be seen, all of these cultures built monumental structures, carved stone sculptures of religious (and later, political) subjects, organized their supporting populations for agricultural and other forms of support, and eventually evolved state-level structures. Writing had its origins in this period, even though there is little evidence anywhere of a fully developed script before about 150 A.D. Although far from being “mother cultures,” these early and somewhat experimental civilizations were ancestral to the later Classic-period forms. They coexisted with the other, simpler forms of the Archaic and Formative as well as with the evolving cultures that eventually joined them in the category of civilization.

Classic (A.D. 150/300–650/900). A rise in populations and the appearance of elaborate and hierarchically organized cultural institutions led to the civilizations of the Classic period. These cultures possessed the full panoply of civilization in the forms of formal architecture, high art in many mediums,



Fig. 1–13. Field archaeology. Unusually good stratigraphy in which a plaster floor sealed the pottery vessels below and supported the later temple platform above. The small Formative temple was, in turn, buried by a defensive parapet around the site of Becan, Campeche, Mexico.

fully developed scripts or elaborated hieroglyphic systems, state-level political units, mixed caste and class societies, and elaborate markets. The ending date is strictly dependent on the area with which one deals. It bears repeating that tendencies started in Formative cultures came to fruition in exotic variety during the Classic period.

Early Postclassic (A.D. 650/900–1250). The reformulation of regional cultures after the collapse of most Classic cultures in Mesoamerica was the major feature of this period. In a sense these were the readapted cultures that took the place of the crumbled Classic civilizations. New and hybrid cultures appeared at the beginning. Paradoxically, these new cultures led to more standardized and secularized forms of states. Regional states became even more common throughout Mesoamerica, often developing into empires or attempting to do so.

Late Postclassic (A.D. 1250–1519). Essentially, this is the stage of culmination of the reformulated cultures put together in the preceding period. We also have historical and native documents as well as eyewitness accounts for this time. More standardization in art, iconography, ideology, and other

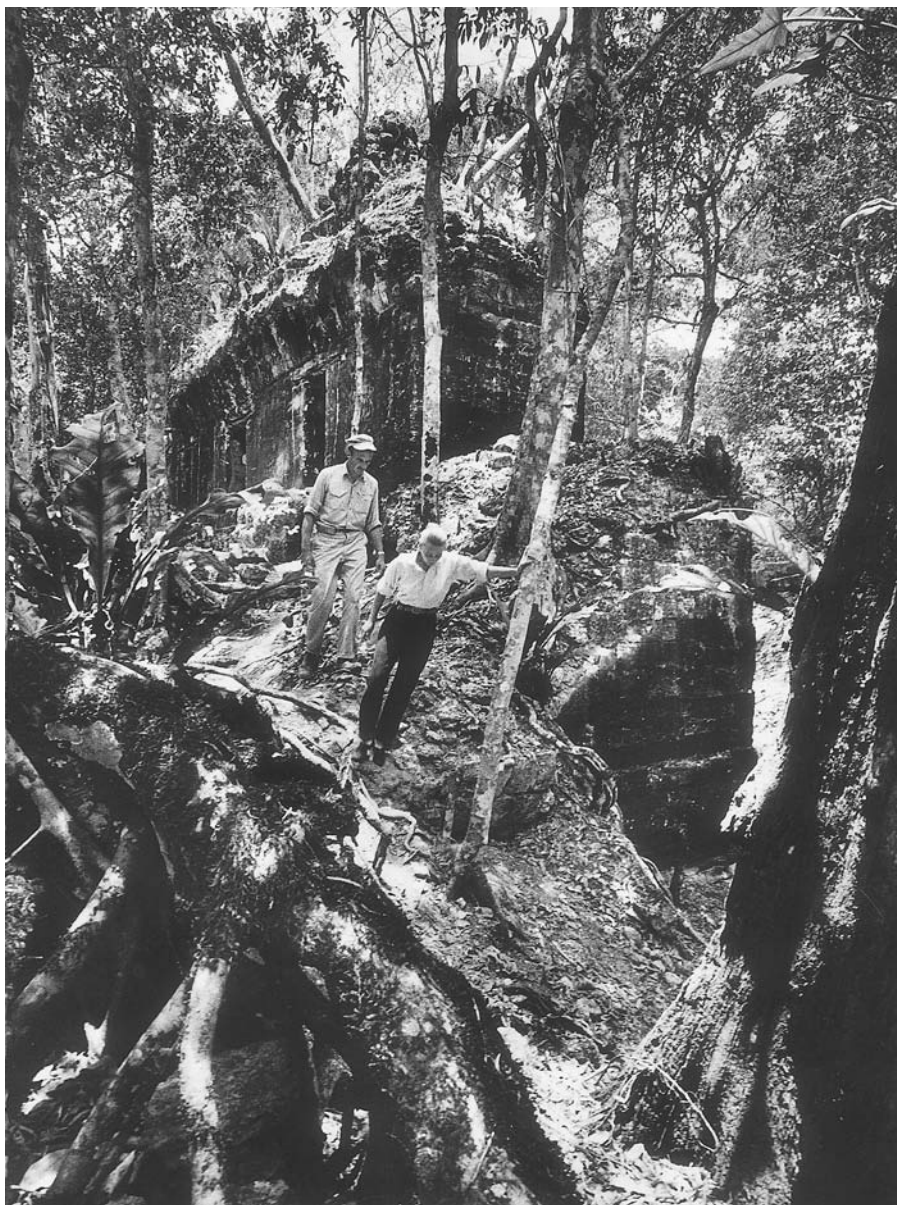


Fig. 1-14. Archaeologists in Central Acropolis of Tikal before excavations. (Courtesy Fritz Goro)

features gives an impression of more homogeneity among the Mesoamerican elite classes. However, what Fernand Braudel (1981) has called *The Structures of Everyday Life* persist in highly regionalized forms among the commoner classes.

The above schemata frame the subject matter in terms of time, space, and content. We shall now turn to the earliest evidence for the presence of humans in Mesoamerica and the data that show the slow development of the economic basis for Mesoamerican civilization.

CHAPTER 2

FIRST IMMIGRANTS AND THE ESTABLISHMENT OF SETTLED LIFE

O protector of all, O giver of life, O Titlacauan (Tezcatlipoca), pity me, give me what is necessary for my life and for my strength—of thy gentleness and sweet essence. For now there is want; there is fatigue in gaining one's needs . . . Take pity upon me.

Sahagún 1963, 3:11

If one looks closely he will find that everything [these Indians] did and talked about had to do with maize; in truth they fell little short of making a god of it. And so much is the delight and gratification they got and still get out of the corn fields, that because of them they forget wife and children and every other pleasure, as if their corn fields were their final goal and ultimate happiness.

"Crónica de la Santa Provincia de Santísimo Nombre de Jesús de Guatemala" in Morley 1946, 2

IT IS NEARLY an article of faith among archaeologists that the earliest inhabitants of the New World came from northeast Asia, crossing at the Bering Strait. The probabilities are that the first migrations were about fifteen thousand years ago and not more than thirty thousand at the outside. The most important and conclusive find, dating ca. 10,500 B.C., has been made in northern Chile (Dillehay 1986; Meltzer et al. 1997). In North America perhaps the best documented and most convincing data at this time is from Meadowcroft Rock Shelter in western Pennsylvania, dating to ca. 15,000 B.C. (Adovasio et al. 1978). The Cactus Hill site in Virginia dates to about 16,000 B.C. (Stone 2003). Mesoamerica is geographically bracketed by these finds, and the best possibilities for this magnitude of age are the sites around Valsequillo in Puebla and that of Tlapacoya in the Valley of Mexico. Before considering these sites, however, we need to set the context by discussing as a whole New World materials possibly older than 14,000 B.C.

No evidence for morphologically primitive humans has yet been found in the Americas. All skeletal material falls well within the range of variation of native groups as they are known from the five hundred years of European contact. A few uncertainly dated skeletal remains discovered

in Minnesota and Texas are possibly earlier than 13,000 B.C. and may be more “primitive,” but these are incompletely published, discredited by incorrect orientation of skulls in publication, or not in the literature at all. However, there is a recent contention that there was a different early population in the New World, quite different in skull shape from that which followed. The study is based on skulls from Pericú (Southern Baja California) and Brazil, all of which date between 9 and 6000 B.C. These people are thought to be isolated descendants of the earliest wave of immigration (Bower 2003, 150).

A body of material, nearly all uncertainly dated, is scattered through dozens of sites over all of the Americas and consistently lacks the developed projectile-point form in the inventory of stone tools. These sites also fairly consistently show an emphasis on the cruder means of manufacturing tools; that is, by percussion or direct blows of one stone on another. Thus, most of the forms produced are flakes and choppers or generalized scraping, digging, and gouging tools. It is claimed that this material represents the real beginning of human habitation of the New World and that it may go back in time to around one hundred thousand years ago. This claim seems exaggerated to many.

This is not the place to discuss in detail the various arguments except as they apply to Middle America. Presently, then, sites in the 13,000–15,000 B.C. range seem to be the earliest reliable finds of early humans in the New World. Given the unlikely possibility of travel across either the Pacific or the South Atlantic at 15,000 B.C., a northern entry into the New World is most likely. Because of no convincing evidence from Beringia (the ancient land connection between Siberia and Alaska) for sites earlier than 12,000 B.C., it has been recently suggested that a North Atlantic entry route could have been used (Bauer 2003). In any case there is the problem of what seems to be a Tour de France speed of migration once people actually entered the New World. One tempting solution to this problem would be to say that movement occurred along the coasts, and in fact many of the earliest sites may be drowned along the present-day coasts. At the height of the last ice advance of the Pleistocene (ca. twenty-eight thousand years ago), so much water was locked up in the ice sheets that the world oceans were lowered by as much as one hundred meters. This would have exposed the coastal shelves on both coasts—for example, the Grand Banks on the Northeast and the shelves along the coasts of British Columbia and the U.S. Northwest. Indeed, a recent underwater archaeological find of a post in an apparent campsite off Vancouver, British Columbia, dates to about 12,500 B.C.

Taken together, these indications suggest that humans were relatively late arrivals from Asia, perhaps arriving as late as thirty thousand years ago, and that still later immigrants may have brought with them a set of

ideas about stone tools that included the punched-blade technique and the lanceolate point. It also may be the case that the lancelike point was a New World invention. Nearly all of the material from North America dating to after 14,000 B.C. includes some sort of lancelike projectile point designed to be attached to a shaft to form a dart or spear. The archetypal form is the fluted point known as the Clovis point.

Pre-projectile point material in Middle America is best represented by Cynthia Irwin-Williams and Juan Armenta's sites in Puebla, Mexico. Valsequillo is a well-known locality, with at least five sites that show human habitation. Most of the stone-tool assemblages lack obvious projectile points, but one is associated with some interesting pictures of Ice Age mammoths incised on elephant bone. The depictions were found with the tools in gravels that seem to be of Wisconsin glaciation age. (The Wisconsin is the last of the four major glacial stages in North America, ending about 7000 B.C.) There has been some difficulty in dating the Puebla materials, because dates before 200,000 B.P., clearly outrageous and unbelievable, have been produced by uranium-series techniques on bone. An initial estimate of six hundred thousand years of age on the Valsequillo gravels on a geological basis also strongly conflicts with archaeological evidence. In addition many of the associated artifacts are a rather nondescript group of flakes, chips, choppers, and other generalized stone items. Other dating estimates have indicated that the Valsequillo material may be between forty thousand and twenty thousand years old. This now seems to be accepted by many archaeologists (Stark 1981; Zeitlin and Zeitlin 2000, 60).

Although the possible projectile points are not of the later lanceolate form, there are three of them in Deposit I of the Hueyatenco site, and these are associated with Ice Age fauna, including elephants. The Tlapacoya site in the southern Basin of Mexico has produced good evidence of cultural remains from this period. Period I at the site is dated ca. 25,000–20,000 B.C. based on radiocarbon assays of carbon from one of three fire hearths. These hearths are associated with jumbled bones of bear, deer, and a sort of stag—all Ice Age fauna. Most convincingly, some 2,500 stone flakes, blades, and cores were found in this level (Niederberger 1976).

Another possibly very ancient find is that of a carved sacrum of a Pleistocene camelid related to such present-day animals as the llama and vicuña. The carving seems to depict a dog's, wolf's, or coyote's face. The find was made in 1870 at Tequixquiac in the Basin of Mexico. Later reevaluation of the site has indicated that the find was made at the bottom of the Pleistocene lake deposits known as the Becerra formation. Simple stone scrapers and splinters of mammoth bone have been found at the same site, perhaps evidence of early man's animal-killing and -processing activities. The splinters would represent butchering and perhaps marrow extraction, and the scrapers could have been used as general cutting tools as well as

for scraping pieces of hide. Dating is insecure, but the bottom of the Becerra deposits is thought to have been laid down beginning around forty thousand years ago.

Given T. D. Dillehay's now generally accepted finds in South America, there should be discoveries of the age suggested by Valsequillo, Tequixquiac, and Tlapacoya in Middle America. Based on recent work, indeed there seems to be such material. Robert and Judith Zeitlin have named this period Early Paleoindian (2000, fig. 2.1).

Elephant Hunters or Daring Plant Collectors?

Solid evidence for early human presence in Mesoamerica after 10,000 B.C. (Zeitlin and Zeitlin 2000, Late Paleoindian) still rests mainly on the finds made by Luis Aveleyra Arroyo de Anda at two kill sites near the small town of Santa Izabel Iztapan in the northern Basin of Mexico (1964). The sites have similar stratigraphy and represent similar situations. A couple of layers of recently deposited soil overlay a level candidly called the "green muck" that is part of the upper Becerra. The mammoth skeletons, mired in the green muck, are the remains of animals chased into the marshy edges of the Pleistocene lake, stabbed and irritated with javelins and spears, and literally "worried to death." Six stone tools were found with mammoth no. 1 and three other artifacts with mammoth no. 2.

There are some difficulties with the dating of these items, because some of them resemble stone points from elsewhere in North America (Scottsbluff, for example) that are fairly securely dated as in use from 7000 to 5000 B.C. However, the carbon 14 dates on the mammoth remains and upper Becerra fall between 9000 and 14,000 B.C. The difficulty has been resolved by the fact that the typological resemblances are not exact and therefore the dating of the Mexican points need not be exactly the same as that of the somewhat similar points from the Great Plains area. This being so, it seems best to accept the median date on the upper Becerra and the mammoth bones, which is about 11,000 B.C. and which nicely overlaps the earliest securely dated material in western North America—Clovis points and their associated tool types.

West Mexico has produced some finds of early projectile points—for example, at Zacoalco, Jalisco. Clovis-like points have been found elsewhere, notably at the Ladyville site in the Maya Lowlands, near Belize City (Hester, Kelly, and Ligabue 1983). Later fish-tailed points, dating to between 9000 and 7500 B.C., were found by R. S. MacNeish's research group in the coastal region of Belize. The site of Tapiales in highland Guatemala, dated as ca. 9000 or 8000 B.C., has produced a Clovis-like point and a large number of woodworking tools. A very large number of probable lithic-stage sites have also been found in the same zone of Guatemala by Kenneth L. Brown (1980).

Cave sites in the Tehuacan Valley to the southeast of the Basin of Mexico and in Tamaulipas, far to the north, have produced approximately contemporary remains in the form of somewhat nondescript collections of scrapers, flakes, and chips. Inasmuch as the rest of the Tehuacan and Tamaulipas sequences show definite and increasing reliance on small animals and plant gathering, MacNeish has suggested that big game hunting as a way of life never existed in the form that it did on the North American Great Plains. Indeed, MacNeish has said that if a man killed a mammoth in central Mexico, he probably never stopped talking about it. The view of Mesoamerican Lithic-stage people as engaging in plant gathering and small animal hunting and only occasionally and opportunistically hunting big game accords with the geographical and faunal evidence. As ecologically favorable as it was for many purposes, Mesoamerica did not have the vast and grassy plains to support large numbers of Pleistocene megafauna. Mammoths and other large game animals did occur, of course, but their numbers were small, and the kinds of specializations in meat eating and hunting that parallel the European Ice Age cultures were simply not possible.

An argument over the role of man in the extinction of large Ice Age game has become quite heated. Some authorities think that the changing climatic conditions after the retreat of the glaciers are the prime factor in the extinction of large herd animals such as the mammoth. Paul S. Martin has argued persuasively that humans, in combination with natural factors, played an important role (P. S. Martin and Mehringer 1965). However this argument may eventually be resolved in regard to the North American plains, in the restricted environmental zones of Mesoamerica, where the populations of large animals were relatively thin, this certainly seems a reasonable explanation of their extinction. The horse disappeared about 7000 B.C., a date that also marks the end of the Paleoindian period and the beginning of the Archaic.

The physical remains of early human life in Mesoamerica were ingeniously found by Helmut de Terra in 1948 in the Basin of Mexico near the small town of Tepexpan. Unfortunately, the excavation technique and circumstances of discovery left much to be desired, and for some time there was grave doubt as to whether Tepexpan "man" was actually a Pleistocene individual. The skeleton was found by means of a mine detector, which also detected a number of water pockets in the former lake bed. Finally, after many false alarms, the bones came to light, apparently in association with the upper Becerra formation. However, the association was not certain, and proof had to wait for the later discoveries of the mammoths at nearby Santa Isabel Iztapan. Fluorine content of the mammoth bones is the same as that of the human bones, indicating that the human is indeed about the same age as the elephants. The individual was female and between twenty-five and thirty years old. It is interesting that the skeleton is

morphologically modern and well within the normal range of various present-day Indian populations of central Mexico. Tepexpan woman, if resurrected and dressed correctly, could lose herself in present-day Mexico City crowds without comment. These characteristics fit with most other data from North America and again are possible indications of a relatively late human migration to the New World.

The Archaic: Plant Collectors and Incipient Cultivation, 7000–1500 B.C.

The record is not continuous between the first glimpse of the earliest cultures at the Iztapan and Tepexpan sites and the earliest remains in the dry cave sites of Tehuacan, Tamaulipas, and Oaxaca. As noted, there are hints that plant collecting and small animal hunting and trapping were always very important for the diet of early humans. Indeed, the pattern of life developed during these periods never entirely died out. Even as late as Aztec times there were people called Chichimeca living near the Valley of Mexico. Diego Durán says of these people:

They lived among the peaks and in the harshest places of the mountain where they lived a bestial existence. They had no human organization, but hunted food like beasts of the same mountain, and went stark naked without any covering on their private parts. They hunted all day for rabbits, deer, hares, weasels, moles, wildcats, birds, snakes, lizards, mice, and they also collected locusts, worms, herbs, and roots. *Their whole life was reduced to a quest for food . . .* These people slept in the hills inside caves, or under bushes, without any heed for sowing, cultivating, or gathering. They did not worry about the morrow, but ate what they had hunted each day. (Durán 1964, 12)

These statements are a fair match for the archaeological reconstruction of life during the long buildup toward village communities based on cultivation. However, it should be noted that the Aztec and Durán are speaking of the survivors of this way of life in the sixteenth century, who had been relegated to the least desirable zones. From 7000 to 1500 B.C. most people lived on wild foods and had access to the best and most fruitful zones. The views of the Aztec are also tempered by the prejudices of civilized people toward “more primitive” peoples. On the other hand, it is clear that most of human existence in these early times revolved around getting the next meal, even if the task was easier than in the sixteenth century.

Social and Ecological Factors

Social organization during the late Ice Age and early Post-Pleistocene epoch is reconstructed as having been family centered with, at most, “band” type organization. Apparently, at certain favorable times of the year these

blood-related groups came together temporarily to form larger social groups. This type of fluctuating society was necessary when population was thin and the way of life nomadic. Following Julian Steward's lead in archaeology and ethnology (Steward 1938), MacNeish has characterized the smaller family groups as "microbands" and the larger, multifamily groups as "macrobands" (1964). The yearly economic rounds involved continual fissioning and regrouping between these two types of society. This same type of society developed Mesoamerican agriculture and formed the basis for the later village farming societies.

With the advantage of knowing the principal food plants that were important among later peoples, we can trace some of the ancestry of these plants through the archaeological sequences. Wild-corn pollen detected from a core taken beneath the Palace of Fine Arts in downtown Mexico City has been dated at about 80,000 B.P. This and distributional evidence indicate that the central highlands of Mexico were one of the zones where wild corn (*Zea mays* spp.) grew. The Oaxacan and Maya Highlands also seem to have been areas that contained many of the wild ancestors of maize and other eventually cultivated plants.

The wild-plant inventory for any single region of Mesoamerica, even if all of the plants were developed to the point of being productive when cultivated, would not be sufficient to support village life. The plants would be neither diverse nor productive enough. For example, about fifty food plants of New World origin are presently for sale in Tehuacan's market, and most of these certainly did not originate or occur as wild plants in the valley at 7000 B.C., when plant domestication began there. However, the compressed ecological diversity within Mesoamerica, along with easy communication between the diverse zones, meant that a necessary condition was present: the possibility of trading both wild and "improved" (semi-domesticated or domesticated) plants from zone to zone. That this necessary condition was taken advantage of in central Mexico is self-evident; we do have evidence of the rise of village life based on agriculture there. However, there apparently were not sufficient conditions—whatever those may have been in the Maya Highlands—to lead to the innovative establishment of village farming life in that area. This is to say that just because the ecological conditions existed for something to happen, there was no inherent necessity for that event—the move to agriculture—to have occurred. Ecological or environmental determinism does not explain all. Historical and other factors must be brought into the explanation. We will consider some of these factors after a review of the archaeological evidence. In the meantime the environmental stage is set with the existence of the vast diversity of topography and associated diverse plant and animal communities crammed into a relatively small geographic area.

The Archaeological Evidence

The two major sequences that reflect the development of highland agriculture have both been developed by MacNeish, who, in an extraordinary and sustained effort beginning in 1948 and continuing until 1975, recovered the major features of this botanical and social evolution from a series of dry, dusty caves in the mountains of northeastern and central Mexico.

The Tehuacan Sequence. To the southeast of Mexico City, the modern provincial resort town of Tehuacan is located in a semiarid highland valley, about 1,676 meters (5,500 feet) above sea level. The valley rises toward the south and is delimited by mountainous terrain on the east and west. Better-watered zones occur on the margins and in the canyons of the area, and it was in these favored environments that the wild ancestors of corn grew. Porous rock formations in these mountains allowed the development of shelters and caves, favored habitation sites by early human populations. Families and groups of families visited these caves frequently, carrying with them their gathered plants and the animals they trapped and hunted for processing and eating. Wild-plant seeds were ground on convenient stones, the animals skinned (or sometimes not) and cooked and eaten. Seeds, fragments of animal bones, grinding stones, pieces of gourd rind, fireplaces, human feces, bits of basketry and netting, chipped stone tools, and other debris littered these caves when in use. These discarded and lost items gradually built up in layers over time, preserving the record of human activities and the increasingly successful manipulation and utilization of plants.

Archaeologists have divided the long period of time involved into convenient segments or phases, each of which is defined by a certain group of stone tools, plants, and, later, pottery. A chronology chart of the phases in the Tehuacan Valley stretches from about 7000 to 1500 B.C., one of the longest, most continuous, and most informative of sequences in Mesoamerica (fig. 2-1). About ten thousand pieces of plant remains, more than eleven thousand zoological specimens, and over one hundred pieces of human feces were recovered from Tehuacan sites. The latter are very important for dietary information, representing complete meals and direct evidence of human consumption. A scientist named Eric Callen has ingeniously devised a way to restore these feces to their pristine condition. Although this procedure has its disadvantages, it also results in such information as the proportion of meat in a diet. Hair and bone fragments even allow identification of animal species consumed.

The earliest Tehuacan phase, Ajuereado, is clearly one of a society adapted to hunting small animals and collecting wild plants at about 7200 B.C., although antelope and Ice Age horses were present as well. Over 40 percent of the diet was derived from wild plants and some 54 percent from

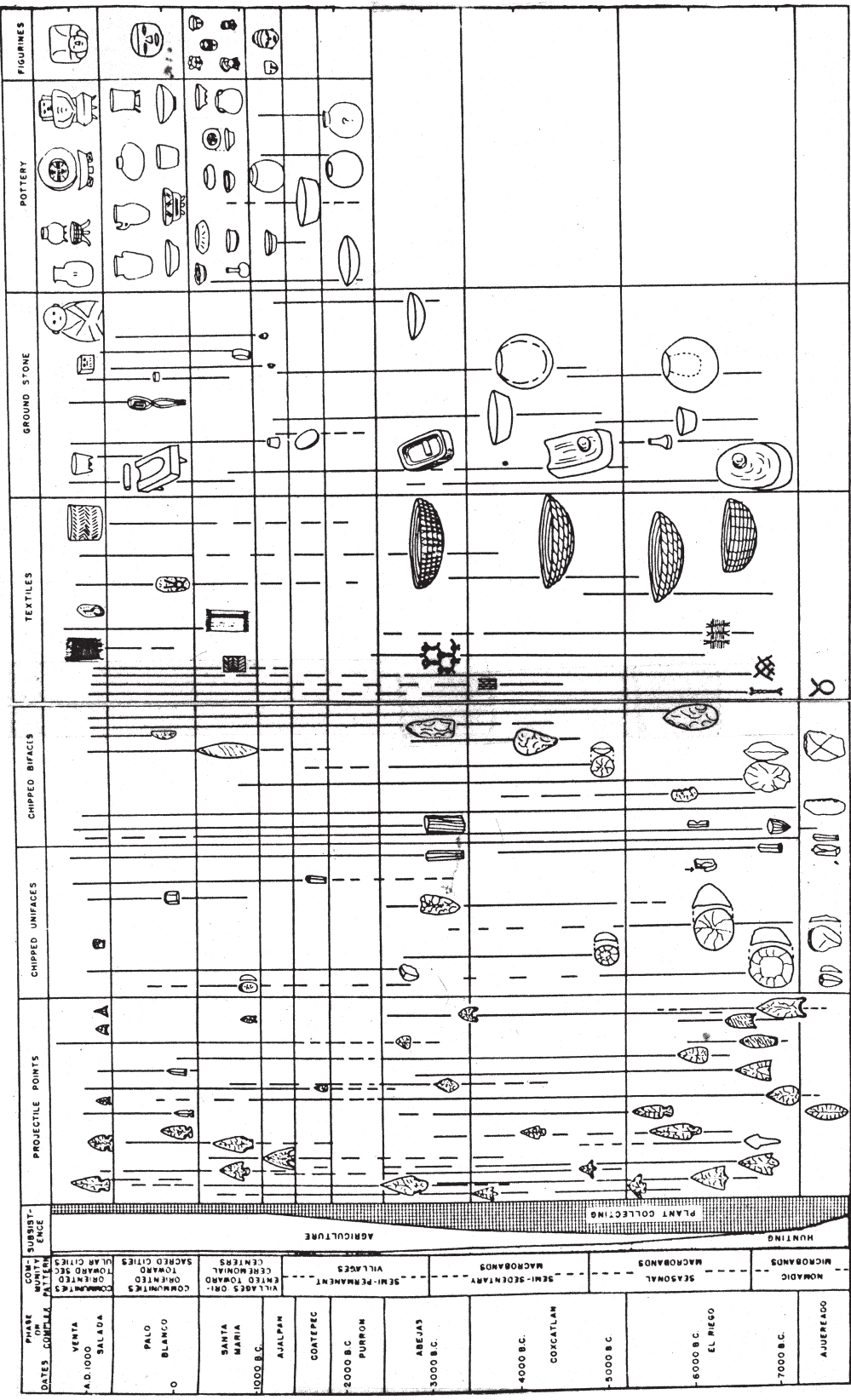


Fig. 2-1. Chart that synthesizes much of the material cultural data for the Tehuacan Valley sequence of central Mexico. Stone tools, textiles, basketry, ground stone, and pottery are emphasized. Note that this development of technology only reflects the more important general cultural developments in matters such as social organization, agricultural techniques (for example, irrigation), political structure, and so on. (Courtesy Richard S. MacNeish)

meat. These trends continued into the better known El Riego phase, which begins about 7000 B.C. At least nineteen kinds of wild plants were used in that phase, but three plants already show evidence that they were domesticated; the most important of them is a type of squash (*Cucurbita mixta*). Chile peppers and avocados were also probably early domesticates, but all three contributed less than 5 percent to the diet. Many uncultivated cactuses, grass seeds (especially *Setaria*), and mesquite beans were eaten. Amaranth, important among the later Aztec as a cereal, is also important during El Riego phase as a gathered plant. Callen's basic data tell us that meat was eaten, but he could not identify the species. Population of the valley is estimated to have been three family groups or twelve to twenty-four people.

In the Coxcatlan phase (5500–4500 B.C.), human population was still thin; however, the amounts of food from gardening activities rose to 14 percent and may have included primitive corn, chiles, squash, and amaranth. For both El Riego and Coxcatlan times, the principal subsistence activities were rabbit drives, stalking game with darts, and collecting fruits, pods, and seeds, all of which were more important than gardening. These mainly wild foods were eaten after they were boiled (vegetables and fruits), milled (grass seeds), and steamed or boiled (meat). Marrow was extracted from the bones. Meat and plant products were also eaten raw. Life was still somewhat nomadic, although gardening and gathering allowed groups to stay in one locality from spring to fall. Nearly all of the stone technology was devoted to exploitation of natural resources. Chipped flint points tipped the darts used for hunting, game was skinned with flint flakes, and hides were prepared by scraping with special stone tools. Hide preparation was aided by bone awls for punching holes. Large choppers represent general digging tools that could be used for digging into rodent burrows and for grubbing up roots. In both El Riego and Coxcatlan phases, stone bowls are found that probably were mortars. A certain amount of ritual in the lives of these people revolved around the burial of the dead. Some offering accompanied the bodies—probably blankets, baskets, and perhaps food. No permanent housing or special buildings of any sort are known.

The next two phases of the sequence, Abejas and Purron (3500–1500 B.C.), are the last Tehuacan phases that we shall consider, although the sequence continues into the sixteenth century. During these phases agricultural output provided first 21 percent and later 35 percent of the diet, with a continuous increase in productivity until about A.D. 600, when a peak of 75 percent of all foodstuffs was reached. On the other hand, meat diminished steadily throughout the sequence, falling from nearly 70 percent of the diet in Ajuereado (7200 B.C.) to 17 percent about A.D. 600. Village life apparently led to a drop in meat consumption, due partly to the increased hunting pressures in the immediate area of the

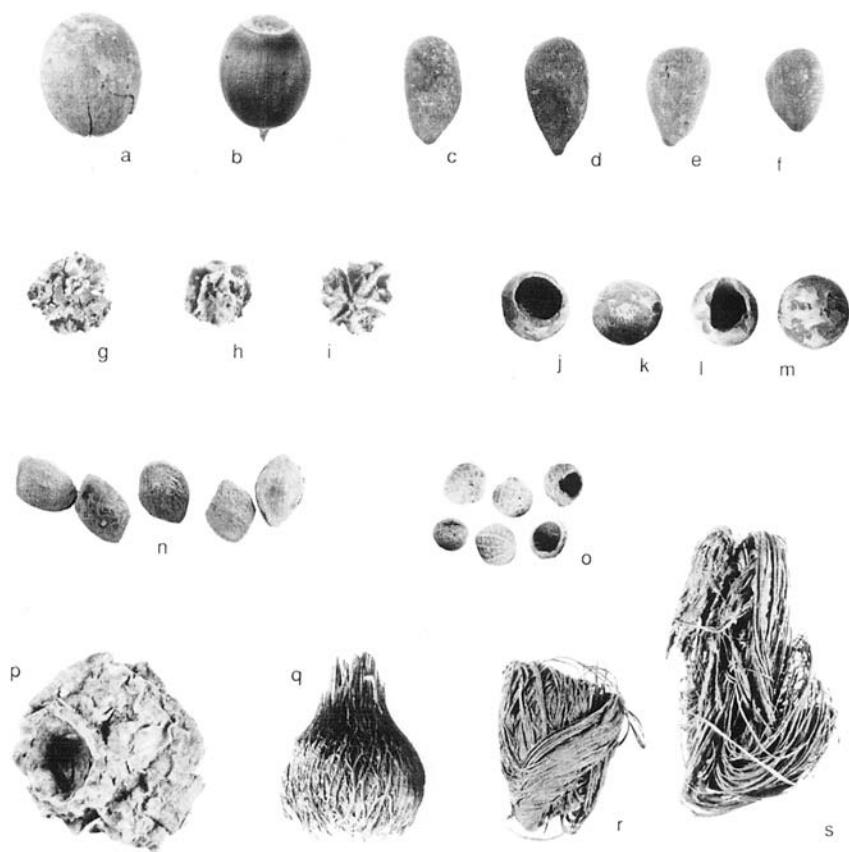


Fig. 2-2. Wild plant food remains from excavations in the cave of Guila Naquitz, Oaxaca. (Courtesy Kent Flannery)

village. Deer and other major targets would have been killed off or migrated out. Other important factors in dietary changes were plant improvement through genetic modifications and continual addition of plants not native to the Tehuacan Valley, such as various races of beans.

The major event of the domestication of plants took place at ca. 3500 B.C.—the introduction of corn (*Zea mays* spp.) into the inventory of plants. A redating of corn to ca. 3000 B.C. seems too late, given the dates of ca. 4300 B.C. for corncobs in the nearby sequence at Guila Naquitz in Oaxaca (fig. 2-2; Piperno and Flannery 2001). Indeed, K. V. Flannery has joined MacNeish in arguing that the 1980 redating of the Tehuacan corncobs to 3000 B.C. was faulty due to the fact that the cobs had been treated with a preservative (Long et al. 1989; Flannery and MacNeish 1997).

Considerable controversy has swirled around the issue of the origin of corn for the past seventy years. The two major current models are based on both plant genetics and archaeological findings. The models can be tagged the highland and lowland models, but they can also be named the hybrid (highland) and mutation (lowland) models to reflect the principal changes thought to be involved in the development of corn.

MacNeish and Mary Eubanks have pointed out that corn has a unique physical structure. The modern races of corn have dozens of exposed kernels on a firm rachis, or cob (2000, 3). These kernels, in turn, are covered and locked away with a sheath of leaves (husks) that make self re-seeding nearly impossible, meaning that corn cannot survive without human care. Clearly, the changes that took place in the past were radical and turned what must have been a very different seed-dispersal system into what we see today.

The lowland school of scholars considers another member of the grass family, an annual teosinte (*Zea mays* sp. *parviglumis*), to be the ancestor of corn. Their view is partly a result of recent DNA and other studies that show *parviglumis teosinte* to be closely related to corn. This type of teosinte presently grows in the lowland environment of the Balsas River of western Mexico; however, the transformation of this supposed ancestor would require five major mutations, and mutations are generally deleterious and statistically rare. Further, there are six stages postulated for the development, adaptation, and dispersal of domesticated corn throughout Mesoamerica. There is no archaeological evidence for the first two lowland theoretical stages. Very tenuous evidence comes from a wetland zone in Belize (Albion Island), where a single grain of *Zea* pollen is feebly dated to 3400 B.C. (Pohl et al. 1996).

This seemingly too early date does, however, correlate with repeated indications from other pollen cores in the lowlands that date extensive forest clearance to the period of 3500–2500 B.C. (Deevey et al. 1979). Recent discoveries of maize pollen in Tabasco dating to 5100 B.C., as well as the above noted Belize find, have led Mary Pohl, Kevin Pope, and their associates to conclude that a humid and tropical forest environment was the origin zone for maize, and they look specifically to the Balsas River zone (Pope et al. 2001, 1372; Pohl et al. 1996). However, these early dates hang literally by threads—single grains of maize pollen in each case. The lowland evidence is fragile in comparison with the massive data of the highlands. Nonetheless, there is a significant group of plant geneticists and archaeologists who prefer this explanation to the other possibility (cf. Piperno and Flannery 2001; B. D. Smith 2001).

The highland school “argues that maize [is the] . . . result of hybridization between two wild relatives of maize” and that “annual teosintes and domesticated maize derived from introgression between an extinct

maize and its wild ancestors” (MacNeish and Eubanks 2000, 7). The hybridization model also has six stages of development and dispersal, and the Tehuacan sequence is by far the strongest argument in its favor, although the earliest dates (ca. 4300 B.C.) directly derived from maize remains presently come from nearby Guila Naquitz. All six stages are visible in the archaeological record. Given that the Tehuacan sequence, which yielded 24,186 maize specimens, is the most persuasive archaeological evidence that exists and that the lowland model requires unlikely mutations, it now appears that the highland school is most likely correct.

The Tamaulipas Sequence. The other major sequence showing a series of phases of domestication is that from Tamaulipas. The northeastern corner of modern Mexico is mountainous, and much of it today is semi-arid mesquite country and thus drier than the Tehuacan zone. An indication of the hotter climate might be noted in MacNeish’s phase names for the sequence (1958), one of which is Infiernillo (Inferno). Again, there is a long developmental buildup through phases beginning about 7200 B.C. and culminating with the establishment of full-time agricultural and village communities about 1500 B.C. The sequence and timing of the appearance of plants is different from that of Tehuacan. In Tamaulipas, as in Tehuacan, squashes are the first domesticate, but they are of a different species (*Cucurbita pepo*) and presumably represent the domesticated version of the local wild plant. The same intensification of gathering and gardening activities takes place, together with the same social changes from nomadic bands to seminomadic groups, and finally, to semipermanent villages. Early Tehuacan squash (*Cucurbita mixta*) does not occur at the Tamaulipas sites until well after A.D. 1.

Corn first appears at Tamaulipas sites about 3000 B.C. It is also an improved variety in its first appearance, albeit not greatly so. The dispersal of corn seems to have been rapid. There are contrasts in the appearance of crucial food plants: varieties of beans, for example. However, enough has been said to make the point that domestication and development of food plants was a process in which all of Mesoamerica was involved, and at times even areas outside Mesoamerica made their contributions. By 1500 B.C. nearly every major region of the co-tradition area had achieved a village farming level.

Dispersal. The dispersal of food plants over Mesoamerica has been summarized by Bruce D. Smith in a succinct article (2001). The question of origin areas for agriculture has been greatly clarified in the past ten years by new data and reanalysis of old data combined with redating of old specimens of the actual plant remains. The New World “triad” of food plants (corn, beans, and squashes) were domesticated at different times and places within Mesoamerica. Initial dates of domestication and appearance now form some coherent patterns, although these will undoubtedly

Table 2–1. Earliest Evidence of Domestication of Major Mesoamerican Food Plants

Plant	Tabasco ¹	Peten/Belize ²	Oaxaca ³	Tehuacan ⁴	Tamaulipas ⁵
Beans (<i>Phaseolus vulgaris</i>)			100 B.C.	300 B.C.	A.D. 700
Corn (<i>Zea mays</i> L.)	5100 B.C.	3500 B.C.	4300 B.C.	3500 B.C.	2300 B.C.
Squash/gourds (<i>Curcubita</i> sp.)	2900 B.C.		8000 B.C.	5900 B.C.	4300 B.C.
Manioc (<i>Manihot</i> sp.)	4600 B.C.	3400 B.C.			
Sunflower (<i>Helianthus annuus</i>)	2500 B.C.				
Cotton (<i>Gossypium</i> sp.)					
Agricultural clearance		3500/2500 B.C.			

SOURCES: 1. Pope et al. 2001; 2. Buttles 2002; 3. Piperno and Flannery 2001; 4. B. Smith 2001; 5. B. Smith 2001

shift with new discoveries and research. Table 2-1 summarizes these initial dates and places. We will ignore Smith’s discussion of maize, both because he argues for the weaker lowland model and because we have already covered the necessary ground. Squashes and bottle gourds were domesticated anciently, perhaps in the Oaxacan zone, and appear there as domesticates ca. 8000 B.C., in the Tehuacan Valley at 5900 B.C., and in Tamaulipas ca. 4300 B.C. Jalisco, in West Mexico, may have been the origin area for domestication of beans, which only reached Tehuacan ca. 300 B.C. and Oaxaca by 100 B.C., arriving in Tamaulipas as late as A.D. 700.

It is argued that agriculture was spread by small nomadic groups that engaged in sporadic, seasonal gardening endeavors while continuing to pursue their intensive hunting and gathering. This argument fits with some of the earliest evidence for plant cultivation in the Maya Lowlands, where campsites on the edges of Cobweb Swamp in Northern Belize indicate wetland planting of crops ca. 1500 B.C. (Iceland 1997; Buttles 2002, 64–69).

It is noteworthy that there are no domesticated animals of great food importance. Dogs show up as domesticates about 3000 B.C. and certainly were eaten as well as being used as aids in hunting, but dogs are no substitute for cattle, sheep, goats, or pigs, all of which were important as domesticates in the Old World Neolithic but were lacking in the New World.

There is no direct evidence from the tropical lowlands for domestication of food plants, but important plants are certainly of lowland origin: vanilla, cacao, various squashlike vegetables such as *buisquil*, and many fruits. MacNeish has considered this data and has completed a project in the Maya

Lowlands (MacNeish, Wilkerson, and Nelken-Terner 1980). Earlier, he suggested a comprehensive explanation for the establishment of village life in both major altitude zones that also explains certain later events (1966). Although written before his lowland work, the basic theoretical structure is still sound.

Possible and Early Lowland Villages

Large shell-mound sites exist both on the Gulf and the Pacific coasts of Mesoamerica, but few have been more than cursorily examined. Exceptions to this are the Sanja and Puerto Márquez sites, which are located on lagoons on the Pacific Coast of Guerrero. A date on material from the shell middens has been read as about 2900 B.C.; it is preceramic and seems to be associated with a clay (house?) floor. Another date, 2400 B.C., is associated with some of the earliest, if not the earliest, pottery in Mesoamerica. The mounds are large enough to suggest semipermanent village life. Barbara Voorhies found a clay floor with two possible post holes at the not too distant Pacific coastal site of Tlacuachero (ca. 3100–2000 B.C.). Other hints of early communities come from some shell heaps on the Veracruz coast, where James Ford and Alfonso Medellín-Zenil found masses of chipped stone and fire-cracked rocks in large sites located on top of fossil sand dunes. No pottery was found on these sites, indicating a date possibly ca. 3000 B.C. at Palo Hueco (Wilkerson 1975). The chipped stone tools from the Veracruz sites are roughly similar to those from the general period of 5000–3000 B.C. in the Tehuacan Valley. Not many grinding stones are present, indicating a reliance on food sources other than seeds. The locations of these sites suggest that shell fishing, fishing in the lagoons and offshore, and hunting of small animals supported these semipermanent early lowland villages.

MacNeish (1966) suggests that this pattern of life and its subsistence base developed between 7000 and 5000 B.C., at the same time when some highland groups were taking their first halting steps toward cultivation and settled life. Certainly, MacNeish thinks, permanent, sedentary villages were in existence on the coasts between 5000 and 3000 B.C., and thus there is a longer tradition of sedentism in the lowlands. These early villages were in favored ecological situations, with the resources of the sea, lagoons, estuaries, swamps, and several transitional types of microzones available to them. Such localized compression of resource zones led to a stable pattern of village life. After 3000 B.C. it is clear that lowland societies began to acquire domesticated plants and techniques both from their own experimentation and by importation from the adjacent highlands. This development probably meant nearly instant food surpluses. The major centers of initial lowland cultivation were probably along the rivers on the natural levees, where,

as M. D. Coe and R. A. Diehl point out (1980), the most fertile land is located. Gareth Lowe has suggested that population growth associated with the possibilities of agriculture, and the anxieties that an agricultural way of life brings, led to the establishment of more formal religious concepts (1971). The food surpluses, the longer tradition of sedentism in the lowlands, the motivation of religious assuagement of anxieties about crops and hazards to them, may well have combined to lead to the establishment of formal ceremonial architecture dedicated to ritual. We shall return to this argument in the discussion of the origins of Olmec civilization.

Christine Niederberger has worked with materials from later levels at Tlapacoya. The Playa-phase material seems to be from hunter and gatherer groups that had made the transition to sedentism by 5000 B.C. A natural disaster occurred in the form of a severe volcanic eruption ca. 3000 B.C., and human life became impossible over most of the Basin of Mexico for about five hundred years. About 2500 B.C. there was a reoccupation of the zone, which was now on the edge of a shallow lake or lagoon (Zohapilco phase). Niederberger reads the data as indicating a permanent village in the vicinity with a food-subsistence base that combined both early domesticates such as corn, squash, and peppers and wild species (1976). Thus, the evidence from the Basin of Mexico to a great extent parallels that from the lowland coasts. However, the zones where earliest and nonagricultural sedentary life was possible in the highlands were definitely limited, whereas such zones were extensive in the lowlands.

There are indications of early regional specializations in cultivated plants in the lowlands as well as in the highlands. The Altamira site on the coast of Chiapas, Gareth Lowe has suggested, is in a zone that is more suitable for cultivation of the tropical root crop manioc than for maize. Although this site dates from about 1500 B.C., it may well reflect a continuation of a long-established tradition.

The archaic sequence of northern Belize in the Maya Lowlands presents new data and many problems. The sites are open, the stone tools are similar to those of later Classic phases, and the stratigraphy is difficult. Even so, MacNeish and his colleagues (MacNeish et al. 1980) have defined five phases running from 9000 to 2000 B.C. Assuming that the basic sequence is sound, the following seem to be the trends in the development of sedentary life in the Maya Lowlands. Early in the sequence, there was a reliance on hunting the remaining species of Ice Age animals, including the giant sloth. Canoe construction is implied after 7500 B.C. by the presence of adzes, woodworking tools. After 5500 B.C. grinding tools appeared and increased in number and variety. Fishing and other exploitation of the sea and lagoons increased after 4200 B.C., with a goodly amount of plants also processed and eaten. In the final preceramic phase sedentary

villages appeared, and the implications are that shell fishing and other lagoon exploitation gave way to a gradual increase in plant experimentation and improvement, and finally, to agriculture.

All of the above is somewhat unsatisfactory because of shaky facts and ambivalent evidence, but there is at least one thing in its favor. It fits the pattern of large-scale and intense interaction among the various parts of Mesoamerica that characterized it in later periods of prehistory. The symbiotic patterns of Aztec times seem prefigured in the simpler, but no less significant, trading of early domesticates among the regions of the highlands. There is nothing to hinder the participation of the lowlands in this kind of interaction, and all of the hints in the archaeological record point toward it. It is clear that much more work on this problem is needed, especially in the unglamorous but crucial excavation of shell middens.

At this time MacNeish's model seems the best explanation of the domestication of plants and the establishment of village life as the basis for later, more sophisticated communities. However, it does not explain certain processes that apparently were in operation to change hunters and gatherers into agricultural villagers. B. L. Stark (1981) has pointed out that a number of elements were probably involved in this transition. One was population growth. She notes that Binford (1968) and others have observed that mobile groups of humans apparently have characteristically long birth spacing. This seems due principally to the problems of caring for more than one small child at a time. If groups become sedentary or less mobile, then shorter birth spacing can be tolerated and population growth will probably occur. Further, there will also be a positive incentive for more children, because they can help with the multitude of agricultural tasks.

Comparison with Old World Domestication

In going over the sequences of New World plant domestication, one is struck by the inordinate length of time that it took to achieve a viable complex of food plants—over five thousand years. When we look at the record of this process in the Old World, we find that things moved much faster. In the Greater Middle East, the development of agriculture and animal domestication took place from about 8500 to 6000 B.C., about half the time of that of the New World. Flannery has suggested that this could be due to three main factors (1973, 1986). The first is the nature of the differences between the New World and Old World cereal crops. Wheat is nearly as productive in the wild as it is under cultivation and needs little modification to bring into domestication. Second, the larger numbers of animals available for domestication in the Old World apparently took up the slack during the chancy period when the first plant domesticates were being developed. Goats and sheep were domesticated first, and then cattle and pigs; all of them carried considerably more meat per animal than

dogs and turkeys, the principal Mesoamerican domesticates. The third factor is the nature of the societies involved. Flannery suggests that due to the general lack of larger domesticable animals in the New World and the general emphasis on gathering, there was not the specialization of labor by sex that one found in Old World hunting communities. Even a child can hit a lizard on the head, but it takes a man in full strength to deal with attempts at domestication and hunting of wild cattle. In the Old World men and women in Pleistocene societies had distinctive task roles, preadapting them for agricultural life, in which women handle tasks around the village or base camp while men are out cultivating. In New World hunting and gathering societies, apparently everyone did everything, and therefore it took time to develop social organization that would allow work specialization by sex, which, in turn, would confer the greater efficiency needed for agricultural life.

The Origins of Mesoamerican Pottery

Some of the earliest Mesoamerican pottery, found at Puerto Márquez on the Pacific coast of Mexico, was apparently fiber tempered. Tempering (or grog), as any potter knows, is material added to the clay to encourage more uniform expansion of the clay during firing. Otherwise, uneven expansion causes spalling, breakage, and other kinds of disappointments. The initial tempering material used in much early New World pottery was chopped grass or other organic material. This material burns out or carbonizes during firing, leaving characteristically porous and lightweight ceramics. The earliest pottery in the Tehuacan sequence is similar to that found at Puerto Márquez but dates to about 2200 B.C. It has been suggested that the stone bowls of the same form found in the sequence are prototypes from which the ceramic forms were developed. However, the dating of these bowls is not certain, and it may be the other way around; the stone bowls may be imitations of ceramic forms. As will be noted, there are also pottery-using villages in the Gulf Coast lowlands dating to about 2250 B.C. and perhaps even earlier.

Fiber-tempered pottery from about 3000 B.C.—the first pottery of any kind to occur in the New World—is found at a site called Puerto Hormiga on the northern, Caribbean, coast of Colombia. Such pottery, from about 2500 B.C., also shows up on the Atlantic coasts of Georgia and Florida. The similarities in form and tempering among all of the earliest ceramics and their dating sequence make it plausible to derive these ceramics from South America. However, the early dates on distinctive pottery inland from the Pacific coasts also suggest the possibility of an independent invention and development of pottery in Mesoamerica.

In any case there is clearly a horizon of large round-sided, neckless jars and flat-bottomed, open pans, tempered with organic materials, found

in a wide distribution around 2400 to 2000 B.C. in Mesoamerica. From this basic horizon all the later regional, diverse, and very sophisticated ceramic traditions apparently stem.

There is no inherent quality in pottery, however, that means any great cultural change is taking place. Pottery is simply an easily replaceable container material that has certain advantages over basketry; it can be used for cooking, for example, and water does not leak out of it so easily. It may reflect a greater sedentism in village life, with consequent accumulation of more storable material, although this is not necessarily so. It certainly bulks large in the consciousness of archaeologists, but this is mainly because of its utility as an analytical device for defining cultural regions and marking phase boundaries.

The Establishment of Regional Varieties of Village Life

Lowland Veracruz: the Bari phases. Recent work by W. F. Rust and Rebecca González Lauck has apparently confirmed much of MacNeish's theoretical formulation (Rust and Sharer 1988). A now dry river channel, the Rio Bari, lies north of the site of La Venta. Natural levees built up along the once formidable river are the sites for Early and Middle Formative villages. The earliest site located, San Andrés, dates from between 1750 and 1150 B.C. and is buried at a depth of more than 5 meters below present ground level. "Small amounts of grit-tempered Early Preclassic [Formative] pottery and marine mudflat-dwelling . . . mollusks" were found (Rust and Sharer 1988). An associated deposit showed possible evidence of cultivation of the zone. Although San Andrés, presumably a small village, is now 13 kilometers (8 miles) inland, evidence shows that it once was much closer to the Gulf and existed in an estuary environment.

The Barra phase, associated with mound building and manioc cultivation at the site of Altamira, is located in the low, swampy coastal zone of Chiapas and dates to about 1650 B.C. Nothing so far found ties it to the earlier Puerto Márquez pox pottery. Barra pottery is sophisticated in decorative techniques compared to either pox ceramics or Purron-phase pottery in Tehuacan. At Altamira the ceramic forms are those of squashes or gourds, complete with the fluting and undulating surface that imitates the segmented surfaces of pumpkins or squashes. Obsidian chips were found which are debris from manufacture of other tools but certainly were not used for processing manioc as Gareth Lowe has suggested (Lewenstein and Walker 1984). Lowe has also suggested that this early pottery developed when a preceramic group that had previously used gourds as containers adopted pottery from a South American source (Green and Lowe 1967) and simply imitated the forms of their older containers.

The Locona phase (ca. 1400 B.C.), recently defined by Michael Blake and John Clark (Blake et al. 1995), appears to be the long-sought transition between the Barra and Ocos phases. Further, it is spread across the

Isthmus and, it is argued, is associated with ranked societies. The latter feature would have been associated with religious leadership. Finally, it should be noted that this is the first detectable period of large-scale cultural uniformity in Mesoamerica.

About 1500 B.C., another early ceramic complex, the Ocos, which is also possibly South American in origin, appeared on the Pacific Coast of Guatemala. The Ocos-sphere complexes spread from the original Locona distribution zone, the Isthmus of Tehuantepec and the coastal regions of Veracruz-Tabasco on the north side and the Chiapas-Guatemalan-Salvadorean Pacific Coast on the south. The Grijalva River trench was apparently included in this area. The Oco-sphere complexes, characterized by the use of very similar pottery and settlements, soon spread over the isthmian area and are presently known from at least twenty-five sites. Most of these are in a coastal, lagoon-estuary environmental setting, but some are on inland rivers at favored locations. Subsistence activities clearly were lagoon fishing and farming the piedmont zones and the annually flooded river levees. The ceramics are again very sophisticated and distinctive, with large, globular jars (*tecomate* forms) and flat pans decorated typically with stamped designs of various sorts, including rocker stamping, zoned dentate stamping, shell-back stamping as well as cord marking and fabric impression. The pottery was colored in iridescent stripes and in red bands of specular hematite around the mouths of the jars.

The Ocos-phase site of La Victoria is located on a former lagoon and even today is not far from the Pacific. Its excavator, M. D. Coe, has pointed out striking similarities between Ocos pottery and Chorrera-phase (about 1500 B.C.) ceramics in the Guayaquil coastal zone of Ecuador (1960): the use of the open pan form, rocker stamping, and iridescent banding. The coast of western South America was noted in the sixteenth century for the development of seamanship and varying sorts of watercraft, including sailing rafts of the sort made famous by the Kon-Tiki expedition. Coe has shown how currents and seasonal winds would aid and make possible earlier voyages between the regions involved.

At this point, then, several things come together in a possible comprehensive explanation. As indicated several times already, South American contacts in Mesoamerican prehistory were possible. Pottery-using communities may have intruded onto the Mesoamerican coasts several times and at several places, both on the Gulf and Pacific sides. Manioc use is possible in the Barra phase, and the emphasis on this plant is definitely more South American than Mesoamerican. The mechanism of contact would have been voyages across the Caribbean and Pacific, mainly coastal voyages or even trips inside the lagoons, which stretch for miles and provide protected waters. However, there is every evidence that early sailors in the New World did not hesitate to leave the sight of land, at least for short



Fig. 2–3. Formative-period clay figurines from Kaminaljuyu, Guatemala. The human figures date from about 300 B.C. and possibly were used by shamans in curing ceremonies.

distances. Recent work indicates that the West Indies were initially colonized by island-hopping sea travelers, again coming from South America, at least by 5000 B.C.

Although ceramics were apparently introduced several times from outside Mesoamerica, directly from South America or from intermediate Central American regions, the Ocos horizon is the first that really took hold and spread the idea of ceramics across a broad area. Almost certainly this concept was not carried by colonizing South American populations but was accepted by already sedentary Mesoamerican populations from visitors or a few settlers (Stark 1981).

M. D. Coe (1960) and Gareth Lowe (1971) suggest that Ocos pottery is so sophisticated that some people must have spent almost all of their time producing it. If so, there must have been a new kind of society, one in which there were nonfood producers and specialists of other sorts. If a group can support a pottery at least part time, it certainly can support a religious specialist, a shaman, equally well. Little information is available on religious concepts of the time, but female figurines appear and perhaps

indicate the sort of fertility ideas with which they were associated in later Aztec times (fig. 2-3). Lowe also suggests that family possession of the crucial agricultural and orchard-crop resources might lead to high-status lineages and social stratification based on relative wealth.

Although the highlands of central and southern Mexico were clearly occupied by agricultural villagers during this period, and many of the lowland areas were being utilized by pioneer farmers using Ocos-horizon pottery, it seems equally clear that large areas of Mesoamerica were essentially vacant. Although a negative case is difficult to prove, it appears that some of the Maya Highlands and much of the tropical forest of the interior of the Yucatan peninsula were empty zones that were only exploited for hunting and gathering. In much of the Guatemalan highlands there is only spotty evidence of early village agriculturalists, and in the Guatemalan lowlands the first farmer colonists appear only about 1100 B.C. However, human population was rapidly expanding elsewhere, and there is a significantly greater number of sites known in other parts of Mesoamerica for the period 1350 to 1100 B.C. than for 1600 to 1350 B.C.

As will be seen, the relatively low Salvadorean mountain valleys, and even the Caribbean coastal lowlands of Honduras, were occupied by Ocos-horizon cultures. The Cuyamel Caves of Honduras have yielded bottle forms very similar to those found at San Lorenzo in the Bajío phase (1350–1250 B.C.; M. D. Coe and Diehl 1980).

Ocos-horizon sites are found in the wetlands of the Veracruz coast and underlie at least two of the later great ceremonial centers of Olmec civilization, San Lorenzo and probably La Venta. Ojochi, Bajío, and Chicharras phases at San Lorenzo are clearly developments from an Ocos base, and it is upon this base that the first—and in some respects most spectacular—civilization of Mesoamerica rests.

Note that MacNeish and A. Nelken-Terner (1983) have produced a synthesis of the preceramic from a different point of view, but one not necessarily incompatible with that taken in this chapter.

CHAPTER 3

EARLY AND MIDDLE FORMATIVE CULTURES

Villages, Regional Centers, and the Olmec

In 1862 I was in the region of San Andrés Tuxtla, a town in the state of Veracruz in Mexico. During my excursions, I learned that a Colossal Head had been unearthed a few years before in the following manner. Some one and a half leagues from a sugarcane hacienda, on the western slopes of the Sierra of San Martín, a laborer of this hacienda, while cutting the forest for his field, discovered on the surface of the ground what looked like the bottom of a great iron kettle turned upside down. He notified the owner of the hacienda, who ordered its excavation. And in place of the kettle was discovered the above-mentioned head. It was left in the excavation as one would not think to move it, being of granite and measuring two yards in height with corresponding proportions. . . . We went, and I was struck with surprise: as a work of art, it is without exaggeration a magnificent sculpture.

Melgar 1869, 1:292

Emerald green Jade . . . its appearance is like a green quetzal feather. And its body is as transparent and as dense as obsidian. It is precious, esteemed, valuable. . . . It is one's lot, the lot of rulers, of the old ones.

Sahagún 1963, 11:222

ARRIVING AT ABOUT 1500 B.C., we have reached the period when Mesoamerica begins to take form—the time of development of the first known florescence, that of the Olmec. In the previous chapter we saw how, over a period of millennia, patterns of exploitation of wild food changed and eventuated in food-producing communities. Based on the extraordinary richness of wild plants and on the resources of lakes, lagoons, estuaries, and the sea, some societies appear to have achieved sedentary communities by 3000 B.C. or before. Pottery was either introduced or invented several times in this context of nonagricultural villages. These same communities, as well as those of the known plant experimenters of the highlands,

had become agriculturalists by about 1500 B.C. Based on the styles of ceramics, which seem partially to reflect ethnic and linguistic differences, several zones of Mesoamerica can be defined (map 3-1).

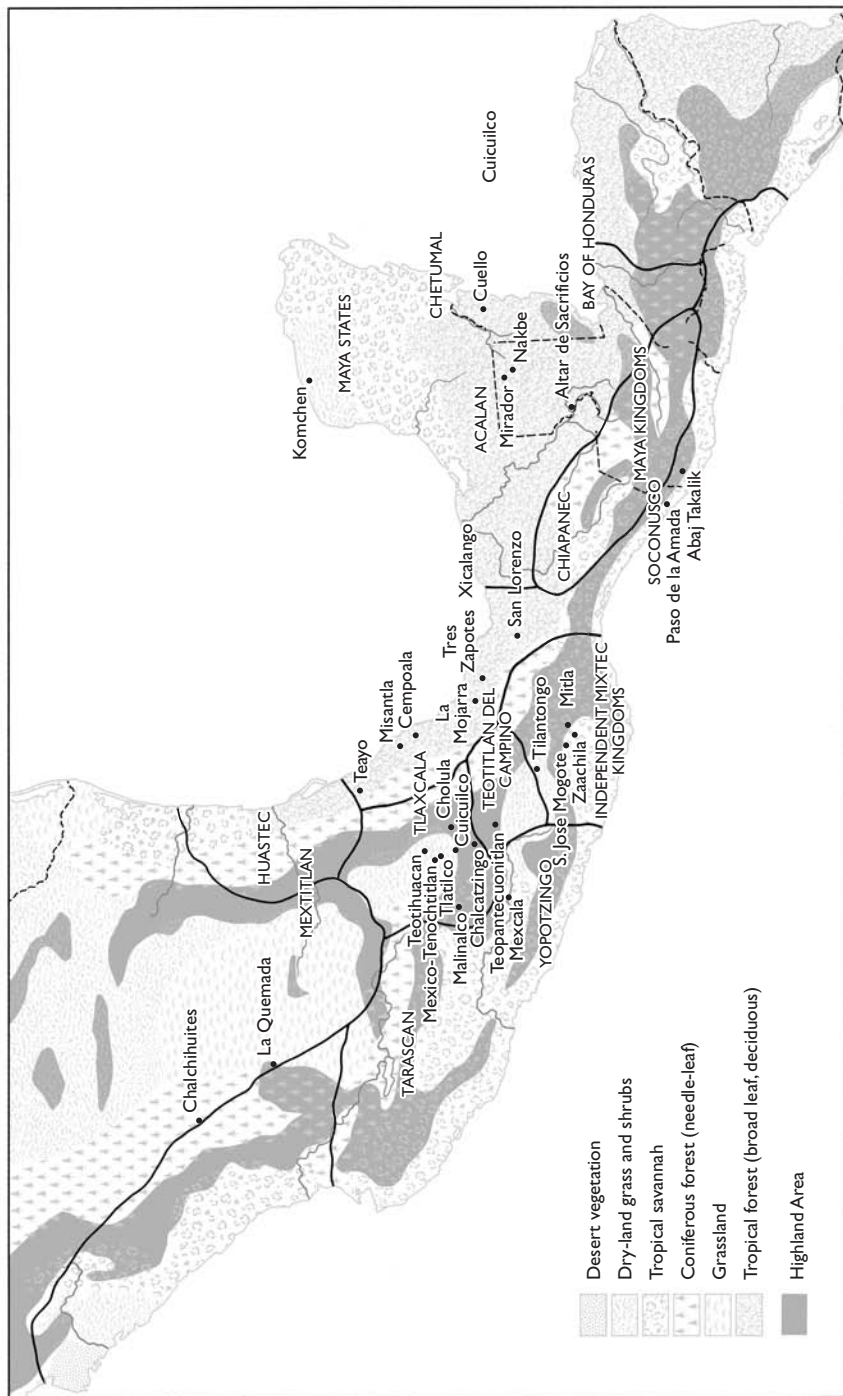
The Gulf Coast, Isthmus of Tehuantepec, and Pacific corridor of Guatemala form a geographical unit, the Isthmian Zone. Much later, this zone was one of the favorite travel routes from the Mexican highlands to the Guatemalan highlands. By 1500 B.C. it was clearly a cultural zone, tied together by the Barra-Locona-Ocos-Cherla tradition of pottery and, later, by the Cuadros-Jocotal-Conchas tradition (Grove 1981; Clark and Pye 2000a). Most of the societies and communities of this zone were reasonably simple villages, presumably concerned with the everyday and basic needs of life: food, shelter, child-rearing, security, and slow development of social and technological forms to aid in these matters. Ceramics were fairly sophisticated, and at first were prestige items but later were also utilitarian. These pots were painted, etched, fluted, and carefully decorated by other means. Art served the functions noted above.

Similarly, religious life was probably basic and simple, with its explanations of the universe and the place of humanity in it available to all. The figurines that appeared along with Barra and Ocos pottery and that multiplied in numbers and forms were probably household items for use in curing, worship, remembrance of ancestors, and the like. In sum, religious life was domestic, concerned with life and its continuity. At most, it was aided by those self-defined specialists, shamans. There is little evidence in most of these communities for much social differentiation until ca. 1500 B.C. After that time, in some areas such as the Mazatan region of the Pacific Coast (in Mexico, near the Guatemalan border), there is evidence for the presence of chiefs.

This characterization of the Isthmian Zone also holds true for the highland areas that we know about, especially for the Valley of Mexico but also for Morelos to the south. The styles of pottery and figurines are different and set the central highlands apart from the lowlands, but the quality of life was about the same.

Within this broadly spread set of village cultures, which probably existed in regional forms in all of Mesoamerica, there were a few communities in which different matters were afoot. However, these innovative communities and their supporting regions were not always the same through time, so we cannot speak of a "mother culture."

The different activities took the forms of new and exotic forms of pottery, economic specialization, and even more impressive, the building of large platforms and mounds. Because these structures required the manpower of communities, not families, they have been termed "public architecture." Such platforms presumably supported perishable buildings used by the whole community. Such public constructions may have occurred as early



Map 3-1. Early and Late Formative Mesoamerican sites.

as the Ocos phase (ca. 1500 B.C.) in Chiapas, which is part of the Isthmian Zone defined above (G. Lowe 1977), but the highlands were not far behind. By 1250 B.C. villages around the sacred peaks of Chalcatzingo had already built two public structures. The inhabitants of the southern Basin of Mexico built terraced, round adobe platforms at Cuicuilco possibly as early as 1400 B.C. (Tlalpan phase), although there are severe problems with the dating of these structures. If one regards “public space” as a sign of increasing sophistication, it appears even earlier in the Oaxaca highlands, at Gheo Shih, where a possible dance ground was set apart by rows of boulders (ca. 5600 B.C.; Flannery, Marcus, and Kowalewski 1981, 59; Marcus and Flannery 2004). However, one probably can also assume that this spatial definition was a common feature among most early Mesoamerican villages—one that will show up with more intensive research in other zones.

Returning to the lowlands, portents of a different focus in religious life, public ritual, and shrines are reflected in the early deposits of exquisitely made jade axes in the springs at the hill of Manatí, not far from San Lorenzo. Food in stone and pottery bowls as well as a remarkable set of rubber balls were found, preserved in the mud at the foot of the hill. Excellent field-work also recovered plant remains, including incense from the copal tree and hog plums. These offerings to the storm gods date between 1600 and 1500 B.C. (Ortiz and Rodriguez 2000), although the dates are somewhat ambiguous because of conflict with known ceramic sequences and different previously published dates (Cyphers 2001). After 1500 B.C., more patterned offerings appeared, in which axes were placed in “flower” patterns. Between 1200 and 1000 B.C., a massive offering of carved wooden busts of men and women was made, again preserved in mud. Axes, wooden scepters, hematite balls, and, distressingly, the bones of sacrificed children accompanied the busts. The wooden sculptures are individualized, and it is clear that there is an attempt at portraiture. Ponciano Ortiz and Maria Rodriguez (2000) suggest that these may be ancestral figures.

It is clear from the evidence at San Lorenzo, a large Olmec site, that massive public construction had begun by 1350 B.C. At this point we are confronted with the spectacular but somewhat problematic appearance of the Olmec, with whom precocious villages of the highlands and elsewhere in the lowlands were in contact. In order to clear away a great many mistaken interpretations that have plagued Mesoamerican archaeology, it is necessary to define Olmec culture and its development at this point. In the following section I have depended a great deal on the published work of M. D. Coe and Richard Diehl (1980; Diehl 2000) and even more on David Grove (1981, 1984, 1987, 1997, 2000b). Grove and his students and colleagues have elicited a great deal of order and sense from previous chaos and have corrected a number of fundamental errors in interpretation (Sharer and Grove 1989; Clark and Pye 2000b).

The Evolution of Olmec Culture

Evidence of in-place evolution of complex culture in the heartland has come from the work of W. F. Rust and Rebecca González Lauck in and around La Venta and from excavations at San Lorenzo as viewed from the new perspective (Grove 1981; Symonds 2000; Clark and Pye 2000b). The village of San Andrés near La Venta dates to as early as 2250 B.C., and these early settlers were farming corn and catching fish (González Lauck 1992). The already noted Bari material from near La Venta is the next oldest known agricultural village that has been found (1750–1400 B.C.; Rust and Sharer 1988).

Three later villages from the Bari phase (1400–1150 B.C.) possess thin, tecomate-form pottery of the same sort that underlies the monumental site of La Venta. This evidently represents the period of colonization of the La Venta salt dome area. Grinding stones of imported basalt and remains of charred palm nuts and mollusk shells give some hint of the diet of these early people. In addition there is evidence that they consumed deer, turtles, dogs, and other foods. Altogether, the data indicate a definitely mixed subsistence base, with a considerable amount coming from nature as before but now heavily supplementing the cultivated plants.

At San Lorenzo three phases reflect this boot-strap development. The Ojochi phase (1500–1350 B.C.) is the local manifestation of the Ocos farming-village pattern and shows no major distinctions from other known sites, although presumably it links to the Bari river-levee villages. The already mentioned shrine at the Manatí springs shows patterning in its offerings.

During the Bajío phase (1350–1250 B.C.), the process that set the Olmec apart from their contemporaries began. The hilltop location at San Lorenzo was modified into a large artificial plateau, which may have involved the piling up of the stupendous amount of over 2.13 million cubic meters (75 million cubic feet) of material. This work, clearly beyond the capacity for organization or labor of an ordinary village or even a group of villages, implies that social developments had already taken place which permitted such an enterprise. The later civic-religious function of this same zone also implies that this was the intended purpose of the construction from the beginning. One platform of sand and clay has also been located, and there is the likelihood of other buried structures from this time (M. D. Coe 1981, 124).

Chicharras phase (1250–1150 B.C.) is probably Proto-Olmec in the sense that most elements were present that later characterized fully developed Olmec culture (Grove 1981). Mound building presumably continued, and there are strong continuities in the ceramics, although new materials do appear. The pottery includes types made with kaolin, an exceedingly fine clay. Hollow, white-slipped figurines and the first greenstone (jade-like) ornaments occur. Further, fragments of monumental stone carvings

are found (see M. D. Coe 1981, figs. 5–7). As Grove notes (1981), the differences between Chicharras and the following florescence of Olmec culture are really quantitative rather than qualitative. M. D. Coe's interpretation (1970, 25) that Chicharras represents "a host of new ideas and/or people" notwithstanding, the more likely conclusion is that Olmec culture is a gradual and indigenous development. Further, the rise to a new level of complexity was at least partly stimulated by interaction with several other regions of Mesoamerica.

Chronology

Olmec culture lasted a long time, and in order to look more closely at the trends and events during this extended period, Gareth Lowe has proposed a basic chronology (1989, 86). Based on rounded-off carbon 14 dating from the San Lorenzo project, the later settlement surveys of Symonds, Cyphers, and Lunagomez (2002), early and more recent work at La Venta, and stratigraphic and stylistic phasings, the following modified chronology includes all the major events of Olmec culture history.

Pre-Olmec, 1600–1200 B.C.

Early Olmec, 1200–900 B.C.

Late Olmec, 800–300 B.C.

Epi-Olmec, 300 B.C.–A.D. 1

Based on work both in the highlands (Tolstoy and Paradis 1970; Grove 1987) and in the lowlands (M. D. Coe and Diehl 1980), it is now possible to define two Mesoamerican-wide horizons based on the shifting importance of two of the four major lowland Olmec sites. The first is the San Lorenzo horizon (1200–900 B.C.), which is the period of apogee of San Lorenzo and possibly of the Laguna de los Cerros sites. Outside of the heartland, this horizon is marked by the appearance of hollow, white-slipped ceramic "babies" and bowls, dishes, and exotic bottles, some decorated with specific Olmec motifs such as the serpent mouth/profile motif. M. D. Coe thinks that the highland sites of Tlatilco and Tlapacoya in the Basin of Mexico, Las Bocas in Puebla, and the San José Mogote site in Oaxaca belong to this horizon (1977). To this list should be added Chalcatzingo in an early Preclassic phase. There may be a pause of about one hundred years between the horizons (Clarke and Pye 2000b). The La Venta horizon (850–400 B.C.) is signaled in the heartland by the decline of San Lorenzo and the rise to power of La Venta. A different set of exported items marks this horizon in other parts of Mesoamerica. Hard white pottery decorated with double-line breaks and other decorative abstractions appears. The export of finished small carvings to places outside the heartland becomes a flood (M. D. Coe 1977). Chalcatzingo probably shows the presence of lowlanders (Grove 1987), and the Oxtotitlan cave murals in Guerrero

date from this horizon. Olmec culture was at its widest distribution in Mesoamerica, as indicated by its presence in Honduras far to the east as well as in Guerrero in western Mexico.

Having dealt with the problems of the origins and chronology of Olmec culture, we can now turn to its great periods, those of Initial Olmec (San Lorenzo phase, 1150–900 B.C.) and Intermediate/Late Olmec (La Venta phase, 900–400 B.C.).

The Olmec Heartland: Natural Setting

Olmec civilization seemingly developed within a very limited geographical zone of about 18,130 square kilometers (7,000 square miles) lying along the Gulf Coast and centering on the volcanic uplift called the Tuxtla Mountains, which are primarily composed of extinct cinder cones and larger volcanoes. What is perhaps the largest caldera today contains Lake Cate-maco. Two major drainage basins flank the mountains, making up the rest of what Ignacio Bernal calls the “metropolitan Olmec area” (1969). The area is watery, swampy, and drowned by heavy rainfall and the annual flooding of the great rivers, which flow into marshes, estuaries, and lagoons on the edges of the sea. From 80 to 125 inches of rain per year fall in a period of six months (June to November). González Lauck (1992), paraphrasing O. H. Jiménez Salas (1990), gives a good characterization: “These lowlands are formed by a complex and dynamic fluvial-lagoon network that includes rivers, erosion gullies, coastal lagoons, swamps, mangrove swamps, and fresh water lagoons.” Rivers form the most important means of communication. Exuberant and flourishing vegetation covers the drier land between watercourses. As in most of the coastal tropical zones of Mesoamerica, there are rich plant and animal communities in the varied natural zones. Matters are made more complicated by the shifting of tectonic plates in the region, causing river-channel changes, and made more exciting by volcanic eruptions in the Tuxtla Mountains during the Middle and Late Formative periods. These natural events had the effect of displacing populations either because of the shifts of the rivers and streams away from them or because of the descent of appalling clouds of volcanic debris.

The area was probably occupied by what MacNeish describes as early and primitive coastal villages living on wild resources and certainly was occupied by early pottery-using cultures by about 2300 B.C. These were farming cultures, using slash-and-burn techniques to master the thick jungle, but they did not abandon the intensive hunting, gathering, and collecting techniques and schedules that had led to sedentary life in the first place. In fact some or many of the early villages were only seasonally occupied (Arnold in press).

As discussed above, these farming villages laid the basis for the in-place development of Olmec culture. It remains to suggest why this development

occurred. Although we have mentioned the evolutionary evidence, we have not suggested any plausible reason why the earliest of complex cultures in Mesoamerica appeared here. The best that can be said at the moment is that, given the apparent priority of the coastal villages, the lowlands had a great deal longer period in which population growth could occur, with all the social consequences that entails. The ideological (political, religious, cosmological) basis for civilization could also be developed during this considerable period. After all, sculpture and other art, as well as monumental architecture, is an expression of a set of philosophical, religious, political, and social ideas. These philosophical premises are the *sine qua nons* for the material accomplishments of a society.

Overview of the Olmec

Before plunging into a mass of detail on Olmec culture, it seems appropriate to give an overall view of the culture as we now know it. Briefly, the culture is made up of two components: a “civilized” elite and the older, simpler (and more persistent) “folk” component. This represents the first appearance of the typical mixed-caste and -class societies that characterized Mesoamerica through all of its history. This is to say that castes consisted of social classes (an aristocratic elite) into which one had to be born, and the classes of commoners, who were ranked according to their occupations. The Olmec and some contemporaries in the highland valleys of Mexico were apparently the first in Mesoamerica to bring forth an elite component, and it was the elite who determined such matters as art style, complex political and economic affairs, and religious movements.

For the Olmec, the elite component centered on clusters of civic architecture in the Gulf Coast zone. These ceremonial centers were made up of large earthen pyramids and platforms that probably supported perishable structures in some of which lived an upper class. The leadership class and the centers were supported by the folk component, the mass of the population, who, because of their slash-and-burn and other styles of agriculture, were unable to reside in true towns and cities but instead lived dispersed through the lowland area in hamlet- and village-sized communities.

Olmec leadership was initially handled by religious heads and then by dynastic lineages of rulers who were identified with the basic deities of Olmec religion and, in the late period, especially with the maize god. A magnificent art style expressed in sculpture and lapidary products depicted the Olmec gods and elite. The elite also developed a dynamic religious and social organization, which brought more people into the Olmec orbit from throughout Mesoamerica through trade, religious conversion, or military activity. Exotic goods, both sumptuary and religious, were either demanded by the elite classes from various parts of Mesoamerica as tribute or obtained through trade. The Olmec acquired obsidian, jade, cacao, iron ores, and

other items through trade or, in some cases, through actual colonies. Trade relationships seem to have linked the Olmec with a series of highland Preclassic cultures that were themselves sufficiently sophisticated to appreciate Olmec religion, art, and status symbols. Grove has characterized the Basin of Mexico communities as the Tlatilco culture sphere, and there is a group of archaeologists who argue that the influence was two-way; this controversy will be discussed later in this chapter.

Political and religious power seems to have shifted among the various centers of the Olmec heartland, but by 500 B.C. the Olmec became victims of their own precocity. Other, more sophisticated and demographically more powerful centers were arising elsewhere in Mesoamerica partly under the stimulus of the Olmec, and these later cultures finally overshadowed them.

Communities and Population

At least three food-producing systems were available in the Olmec zone. One was the early intensive gathering and hunting system that had led to settled life in the first place. There were also two major farming systems based on the kind of land used. The most favorable lands for cultivation were and are those of the river levees, which are annually flooded and enriched by deposits of silt. This Nile-like situation allows two or more crops per year to be planted using slash-and-burn techniques. However, these “favored” zones are subject to flooding and other farming disasters. Away from the rivers and on the slopes of the Tuxtla Mountains or the edges of the highlands, one crop per year is more usual. M. D. Coe (1968) suggests that the families who initially controlled the best lands along the rivers were those that eventually became the entrenched elite-class lineages. Indeed, this economic and social advantage shows up in modern times; recent pioneer families who control the river lands have turned out to be those who have the capital to go into retail trade in the small river towns and thus control the local economy (M. D. Coe and Diehl 1980). Surpluses can be used for various purposes, and that which today is used for personal aggrandizement might have been used in ancient times to build up political and religious allegiances. This being said, recent research indicates a mixed economy of hunting, fishing, and gathering, heavily supplemented by farming.

Bernal estimates that the 18,130 square kilometers (7,000 square miles) of heartland supported an average of some 50 persons per square mile, or around 350,000 at its most densely populated (1969, 17). Even if one objects to such a high density and accordingly cuts the figure in half, it still means that about 15 percent of the population were able-bodied men. Therefore, some 25,250 men would have been available for communal activities in addition to food production. This assumes a population based solely on slash-and-burn maize farming; and indeed, corn makes up 90 percent of the diet in the region today. However, data from the San Lorenzo

center show that the Olmec also derived valuable protein from sources such as deer, wild pigs (peccaries), and especially fish. Oxbow lakes and sloughs are especially favorable for seining, and favored fish included robalo, tarpon, and gar.

Given these subsistence and demographic resources, the Olmec elite developed ceremonial centers; however, there were also certain restraints. Slash-and-burn agriculture, with its shifting fields and necessity for holding large amounts of land fallow, meant that population expanded geographically as it grew in size. Modern community size is generally limited, although large absolute populations can be sustained: theoretically up to 54 persons per arable square kilometer (150 per square arable mile). However, this population is dispersed over the cultivable land, and hence there may have been the ancient development of civic centers that were often virtually deserted during most of the year and where only a small elite class and its supporting population lived. Given the discoveries of vast zones of Classic-period intensive farming in the Veracruz and Maya Lowlands (Siemens et al. 1988; R. E. W. Adams, Brown, and Culbert 1981), the possibility now exists that the Olmec may have depended in part on intensive farming, meaning that the Olmec would have had much greater economic resources and human populations than previously thought. Such a pattern of intensive farming may be implied by Rust's discovery of eight village sites contemporary with La Venta and of domestic remains inside La Venta proper (Rust and Sharer 1988). Stark argues that the centers were the means of concentrating a thin and dispersed population by religious ties (2000).

Olmec Centers

Bernal (1969) considers the Olmec centers to have been, functionally, dispersed cities. In this view the centers operated as urban foci for complex social, political, religious, and economic behavior but did not have the permanent large concentrations of people that we would expect in a city. This interpretation, of course, ignores the possibilities of intensive farming. Moreover, as will be observed later, preindustrial cities are usually small, sometimes 3,500 to 5,000 people, as in sixteenth-century England.

Based on what remains to us, it appears that the Olmec built mainly in earth and clay, the principal materials at hand. Clay, either in bulk or in the form of adobe bricks, was heaped up and apparently plastered with adobe. Occasionally, the facings of small structures were made of stone, but that material had to be imported to the zone with great effort and was mainly reserved for uses such as drains and sculpture. The amount of earth moved by Olmec builders is impressive. It is generally found in the form of very high or fairly low platforms. The Stirling Group acropolis at La Venta, a large flat platform, was made of some of at least 5 million cubic meters (16.5 million cubic feet) of material. In many sites, including La Venta,

platforms are arranged in a linear fashion, about eight degrees west of true north. Barbara Stark's work (2000) has shown that this pattern was duplicated in several sites smaller than La Venta. Mounds were also arranged in groups around courtyards. Smaller platform mounds presumably supporting housing on the commoner level—wattle-and-daub huts with thatched roofs similar to those used today—are numerous. Recent work by Ann Cyphers and her colleagues and students has produced evidence for many small structures in the vicinity (Cyphers 1997). All of these structures imply effort enough, but there is also the possibility that entirely artificial ridges of clay were piled up by the Olmec to serve as megaplatforms for formal architecture. The final form of the San Lorenzo plateau, comprising some 42 million cubic meters (about 140 million cubic feet) of material, is just such an artificial feature (M. D. Coe and Diehl 1980).

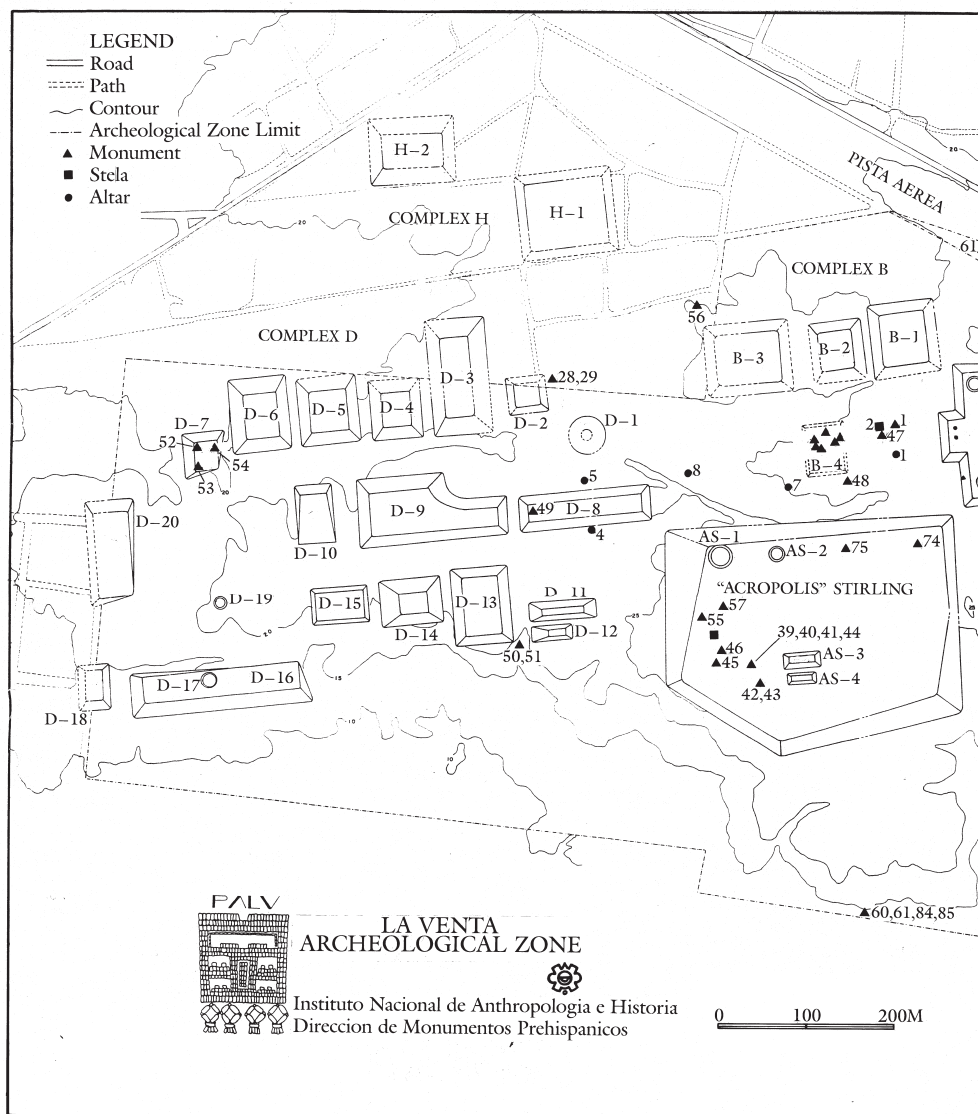
There are certainly three and possibly four major Olmec sites known from the heartland area: La Venta, San Lorenzo, Tres Zapotes, and the more recently discovered site of Laguna de los Cerros. Only the sites of La Venta and San Lorenzo have been somewhat satisfactorily sampled, and even these would yield a great deal more to excavation. A Mexican project at La Venta, sponsored by the National Institute of Anthropology and History (INAH) and led by Rebecca González Lauck, has done a great deal of revealing work, and she has literally saved La Venta from further destruction by the oil-company settlement. Stark's surveys in the Papaloapan River Basin (1977) also indicate that much more information will be yielded by further investigation. Susan Gillespie has published a study of the Laguna de los Cerros sculptures (Gillespie 2000), but the preliminary map made by Alfonso Medellín-Zenil in 1960 remains the only survey published (see Bove 1978 for the most detailed and complete version of this map; see also Bernal 1969, fig. 5, for a small but more available version). The site is large, with nearly a hundred mounds. San Lorenzo and Laguna de los Cerros both have heavy overlays of Classic and Postclassic structures, and thus it is not certain that the plans seen on the surface are those of the Olmec era. Further, Tres Zapotes is evaluated by Grove as a secondary site during Olmec times, with its big period at the end of the Formative (1997). Christopher Pool, based on his long standing work at the site, essentially accepts this assessment (2000).

All this informed evaluation yields three large sites spaced about the same distance from one another: San Lorenzo, La Venta, and Laguna de los Cerros.

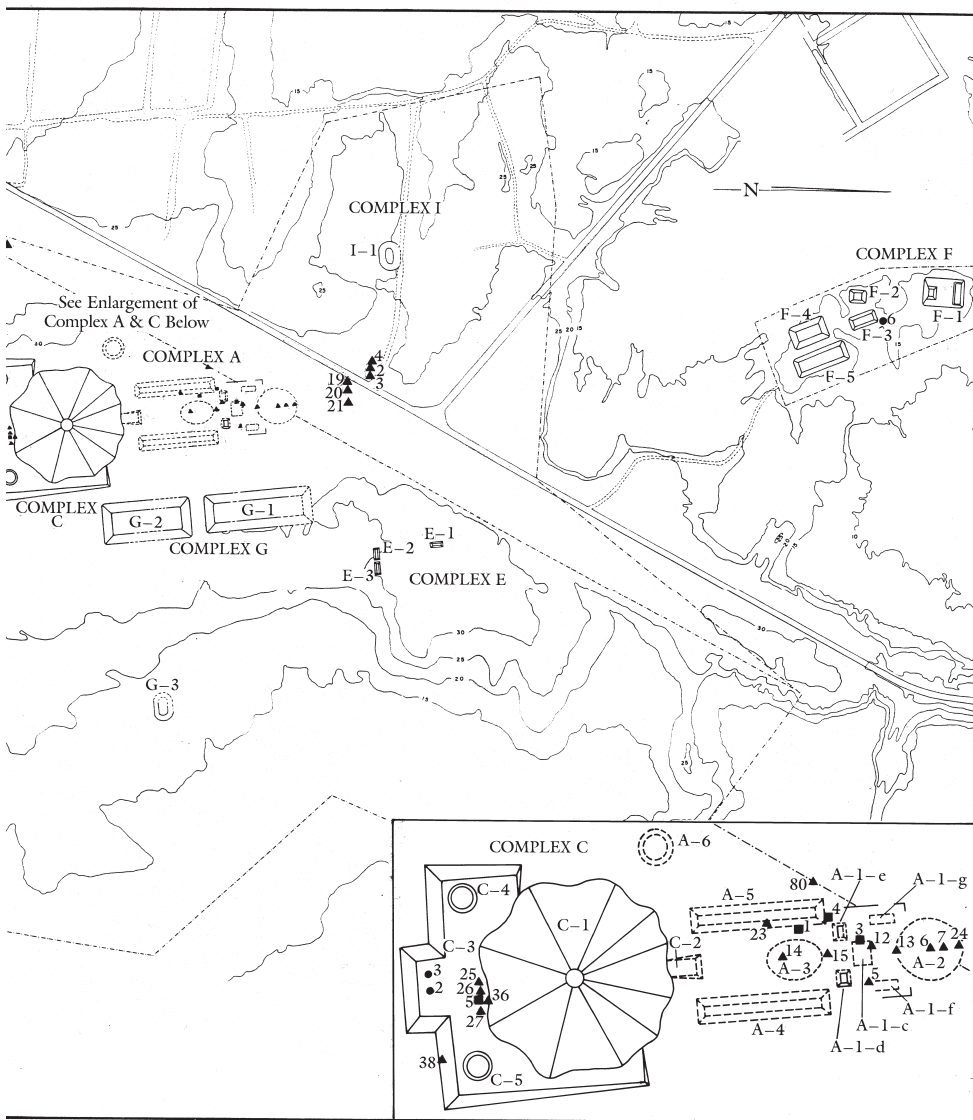
San Lorenzo. San Lorenzo is located on a river, the Rio Chiquito (a subordinate stream of the larger Coatzacoalcos River) but has a great deal more open country around it than La Venta, to the east. The Tuxtla Mountains are in view from the site and within reasonably easy access. The main group of formal buildings, located over a salt dome that was artificially

modified by terracing and leveling, consists of linear arrangements of mounds with closed courtyards. Recent surveys have indicated that the area of site habitation was much larger than had been previously estimated; 1,704 acres (versus the earlier estimate of 690 hectares; Symonds 2000). Some twenty ponds and two hundred small mounds were found on the ridge, but all seem to be the product of modern ranching. Large basalt-lined conduits drain the plazas. The amount of stone used in these features is enormous; some thirty tons of basalt alone were used in a drain just 197 meters (650 feet) long, and this is only one of many such features. Cyphers (1997) has found what are perhaps elite residences and public buildings. There is much stone sculpture in the distinctive Olmec style, representing not only artistic wealth but also considerable effort invested in freighting the enormous tonnage of basalt. Stacey Symonds's recent work indicates that there is an "inner hinterland" of about 90 square kilometers (56 square miles). The zone contained at least 135 sites during the period 1400–900 B.C., ranging from hamlets, villages, and small mound groups to the massive center of San Lorenzo itself (Symonds 2000). Symonds and Cyphers estimate a population of 1,100 people in the zone in and immediately around San Lorenzo, presumably the immediate supporting retainers of the still smaller, resident elite population. Symonds and Cyphers's work shows that the surveyed occupation area of about 400 square kilometers (248 square miles) would allow for approximately 13,600 people (Symonds et al. 2002, 66). And there were surely many more people under the control of the upper class, given the enormous amounts of building accomplished, even if the work was spread out over several centuries. Restricting available population to the immediate vicinity is as unrealistic as explaining the construction of medieval cathedrals such as Chartres in France by the relatively small rural populations around them today. It seems more likely that we are dealing with an available population of tens of thousands.

San Lorenzo's great period is the earliest known among those of all the three major sites. The end of the site's predominance—about 900 B.C.—is marked by the notable destruction of both architecture and sculpture. Deliberately mutilated sculpture was buried in lines, and some of the great stone heads were later carried off to La Venta. Because these were probably the portraits of elite-class leaders, a political as well religious turnover is indicated. Grove suggests that mutilation of sacred sculpture associated with sacred rulers was a means of releasing dangerous power inherent in such monuments. At any rate when San Lorenzo lost its power and was deserted, and after an unexplained pause, Olmec culture continued to flourish and entered a still more dynamic phase at the large site of La Venta. Population dropped drastically in the region after 900 B.C. (Symonds, Cyphers, and Lunagomez 2002; Symonds 2000; Wendt 2003). All indications are



Map 3-2. Recently revised map of the central section of the Olmec site of La Venta, Veracruz, Mexico. A great many very large earthen platforms have been recorded, although many others were undoubtedly destroyed by the Pemex oil refinery and town built on the island. (Courtesy INAH and Rebecca González Lauck)



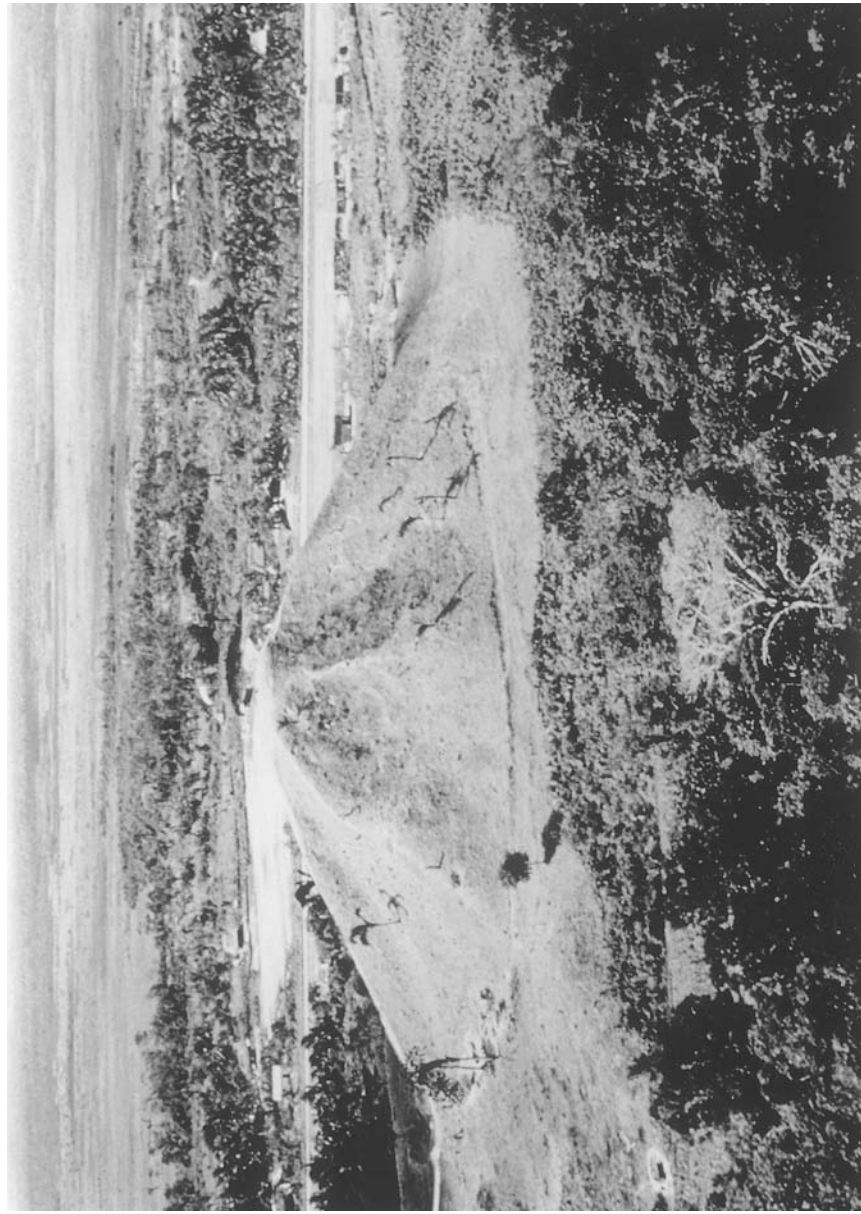


Fig. 3-1. Structure C-1, La Venta, Tabasco, Mexico, probably the most important ritual structure in Olmec La Venta. Although it has the appearance of a fluted cone, this is due to erosion. The excavations by Rebecca González Lauck have shown that the original form was that of a rectangular platform. (Courtesy John A. Graham)

that the rapid rise and fall of population at the beginning and end of San Lorenzo's great period were the result of migrations rather than increased or decreased fertility rates, epidemics, or other Malthusian factors.

La Venta. La Venta is an island site in a swamp on the Tonala River and not obviously associated with any large zone of agricultural land. The island is formed by the upward bulge created by a salt dome. It was occupied from about 1400 to 600 B.C., with its great period falling entirely within Intermediate/Late Olmec times. Based on González Lauck's remarkable map of the site, the center covered at least 495 acres (ca. 200 hectares; map 3-2). The greatest number of structures are large clay platforms aligned on the basic axis of the site: north-south. These platforms may have supported elaborate, elite-class housing of wood and thatch. Test excavations in G and E group zones have found not only domestic trash but evidence of urn burials, large pottery offerings, and a serpentine artifact workshop (Rust and Sharer 1988). The site is unusual in the symmetrical layout of two of its mound groups, Complexes A and C, which actually make up one functional unit. The large pyramid, C-1, was once rectangular but has been modified by erosion into a fluted cone, misleading some scholars because of its striking resemblance to volcanic cinder cones in the Tuxtla Mountains (fig. 3-1).

Two low flanker mounds in front of the high platform of C-1 lead to a kind of inner courtyard. In the late phase at La Venta the courtyard had a palisade of basalt columns erected around it, possibly for privacy. The famous group of sixteen jade figurines now on display in the National Museum of Anthropology in Mexico City has a similar palisade of six jade celts (figs. 3-2, 3-3). As noted, the greenstone celts refer to the storm god and water. The group probably depicts a ritual scene that actually took place within the basalt palisades in Complex A. The figurines represent a group of jostling onlookers, a file of participants, and a principal figure backed against the palisade. The group was found associated with the Complex A mounds.

Mounds like those of Complex A probably supported perishable buildings, and the nearby Stirling Acropolis platform possibly supported sumptuous but perishable elite-class housing. The various uses of log-shaped basalt columns in both a tomb and the courtyard at La Venta suggest that the perishable structures were partially made of upright logs. The possibly elaborate nature of such wooden buildings is suggested by the few examples of wooden Olmec sculpture and the ethnographic analogy of the marvelously carved Maori wooden houses from New Zealand (for example, in the Anthropology Museum of Hamburg, Germany). As at San Lorenzo, stone drains were built at La Venta to carry rainwater away from the mounds and platforms (fig. 3-4).

A great deal of monumental sculpture and many monumental offerings are present at La Venta. The colossal stone heads are rulers' portraits in

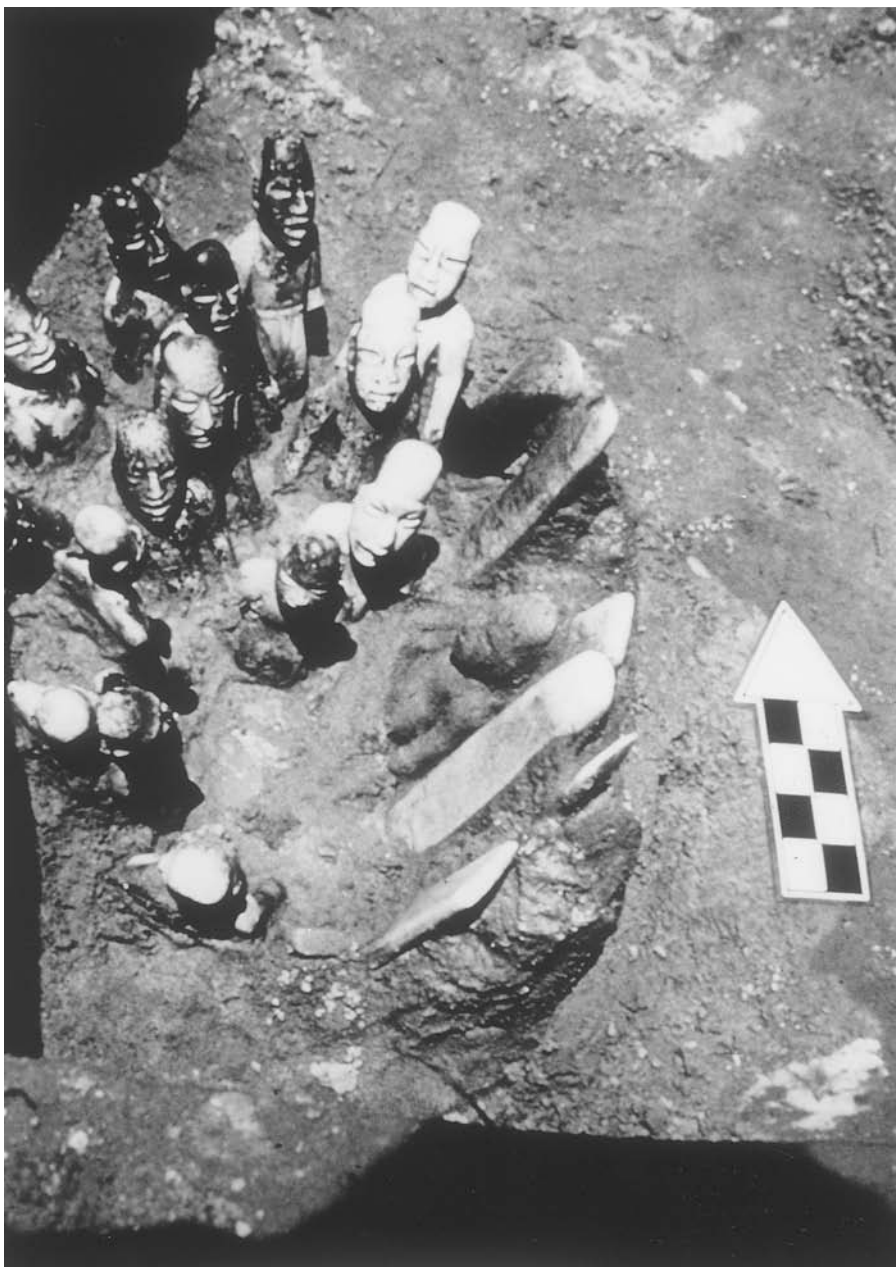


Fig. 3-2. Group of Olmec jade figurines and celts anciently arranged into a ritual scene at La Venta. The celts form a fence similar to that found on La Venta's Southwest Platform, Group A. Note the figure standing against the fence, who observes four persons entering the enclosure. A crowd of people on the left completes this enigmatic scene. (Courtesy John A. Graham)



Fig. 3-3. Beginning of excavations in the southwest platform, Group A, La Venta. Note the basalt-column fence around the platform, possibly represented by the jade celts in fig. 3-2. (Courtesy John A. Graham)



Fig. 3-4. A covered drain at La Venta. Probably designed to carry away the runoff from the torrential downpours that characterize the region. (Courtesy John A. Graham)



Fig. 3-5. San Lorenzo Monument 1, a colossal head. There are twelve known colossal heads from San Lorenzo, La Venta, and Tres Zapotes. They appear to be portraits of rulers, and at least some were made from recarved thrones of the rulers, according to recent studies by James Porter. (Courtesy John A. Graham)

the interpretation accepted here. James Porter (1990) has brilliantly analyzed the evidence for the recarving of the colossal heads and has convincingly demonstrated that many, if not all, were originally the altar-thrones of Olmec rulers (figs. 3-5, 3-6). Presumably, the rulers held forth from their thrones during their lifetimes, and at their deaths the thrones were converted

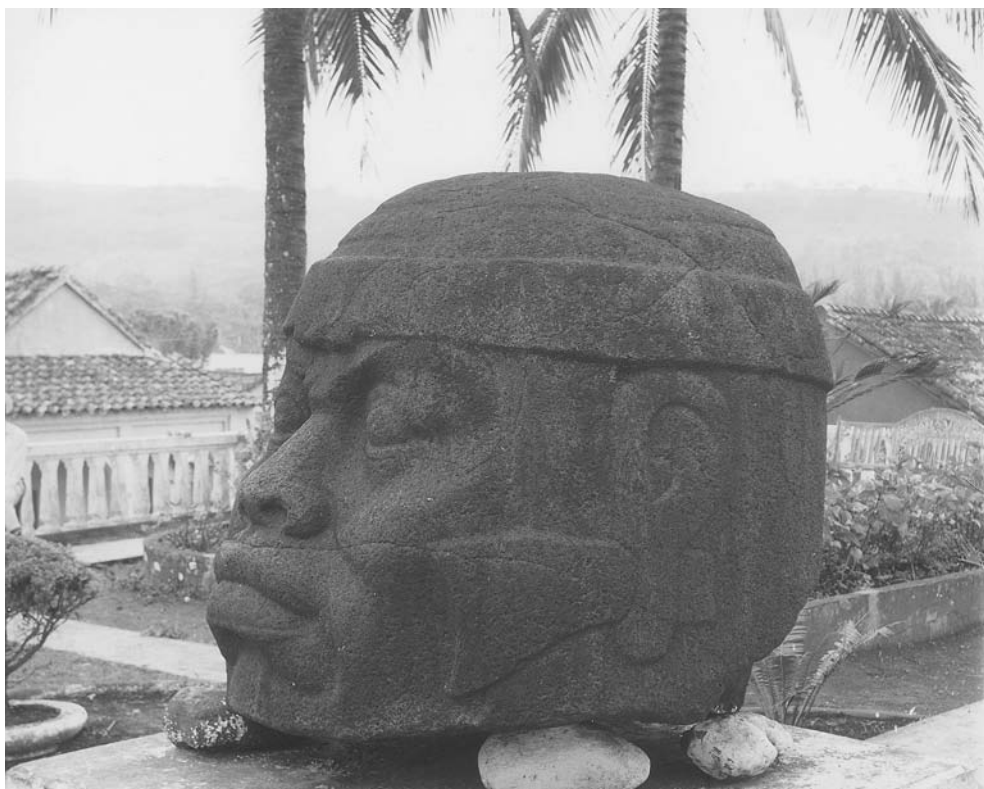


Fig. 3-6. Tres Zapotes Colossal Head No. 2. This smallest of the colossal heads weighs 8.5 tons. (Courtesy John A. Graham)

to portrait-memorials. A stela found by González Lauck is interpreted as representing a transfer of power from one ruler to his successor.

The site of La Venta is still somewhat enigmatic; it is rich in artifacts, precious objects, and fine sculpture, yet its location and size are small enough to imply that not much of the supporting population lived on the island. The new Bari finds indicate that many villages and subsidiary centers were located nearby. However, La Venta does have the aspect of a religious pilgrimage center (Rust and Sharer's "temple town") as well as that of an elite residential center. Victor Turner has noted that major pilgrimage centers of modern Mexico are often outside major population centers. This was also true in the later periods of pre-Hispanic Mesoamerica. The sixteenth-century island sanctuary of Cozumel off the east coast of Yucatan drew people from all over Mesoamerica and Central America. La Venta as a pilgrimage center may fall within this pattern (figs. 3-7, 3-8, 3-9, 3-10).

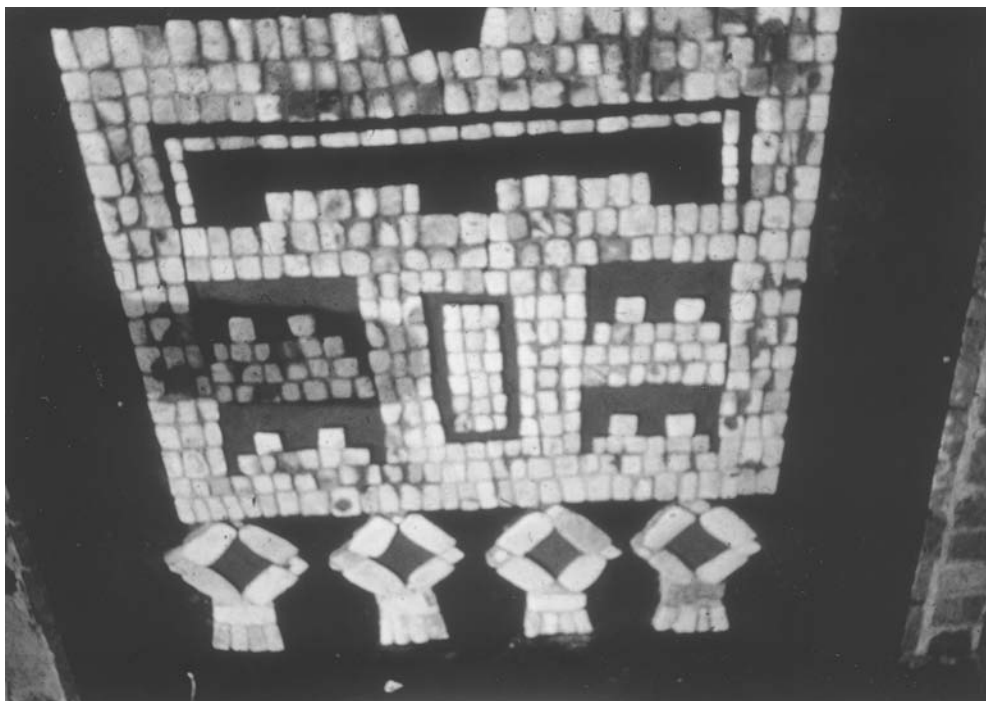


Fig. 3-7. The mosaic serpentine mask found beneath Group Southwest Platform, La Venta. It is possible that the mask represents a jaguar with a typically notched Olmec head. (Courtesy John A. Graham)

Laguna de los Cerros. The least known of the three major sites, Laguna de los Cerros sits on the southeastern outlying hills of the Tuxtla Mountains. It qualifies (with Tres Zapotes) as an “upland” site, but only in the comparative sense that it is above the immediate area of river flooding. There are up to ninety-five large mounds at Laguna de los Cerros, occupying about 40 hectares (99 acres; Bove 1978). As at both La Venta and San Lorenzo, the long axis of the largest plaza is oriented north-south, with the biggest mound on the north end. The sculpture is poorly known, although Gillespie has made a good start on its recording and analysis (2000). There is little that matches the giant sculptures of the other two sites; no giant heads, no large altar-thrones, and no stelae. However, the lack of excavation of the site and the fact that post-Olmec peoples occupied the center and reset the monuments may be misleading. Bove’s work in the 1970s shows that the lowest levels of the site date to the last part of the Early Formative, and thus Laguna de los Cerros does begin nearly as early as any center. There is an interesting small site (Llano del Jícaro) nearby, where sculpture was done and where several unfinished pieces were found.



Fig. 3–8. The immense stacks of serpentine blocks underlying the mosaic mask in fig. 3–7. Imported material—several tons of it—was used to create a base for the mask and probably constituted something of an offering in itself. (Courtesy John A. Graham)

Tres Zapotes. The site of Tres Zapotes is located to the west of the Tuxtla Mountains and is poorly known except for its sculpture. There is no adequate map of the site, although Stark's work may remedy this problem. The ceramics of Tres Zapotes indicate that the center was certainly contemporary with La Venta and Laguna de los Cerros (Stirling 1943; Drucker 1943b; Gillespie 2000). Closed courts surrounded by earthen or clay structures include dispersed monumental sculpture, such as two large stone heads found in different parts of the valley. This site was occupied for a longer period than the other three known major centers, as indicated by both ceramics and sculpture. A later and derivative sculptural style called Izapan appears at Tres Zapotes as well. For the Initial through the Late Olmec periods, however, it appears to have been a secondary center to Laguna de los Cerros.

In summary, Grove (1997) has proposed at least three settlement levels based on Cyphers and her colleagues' work. At the top would be the major sites, followed by secondary centers such as Tres Zapotes with small amounts of sculpture, and then by still smaller villages. All three major sites have

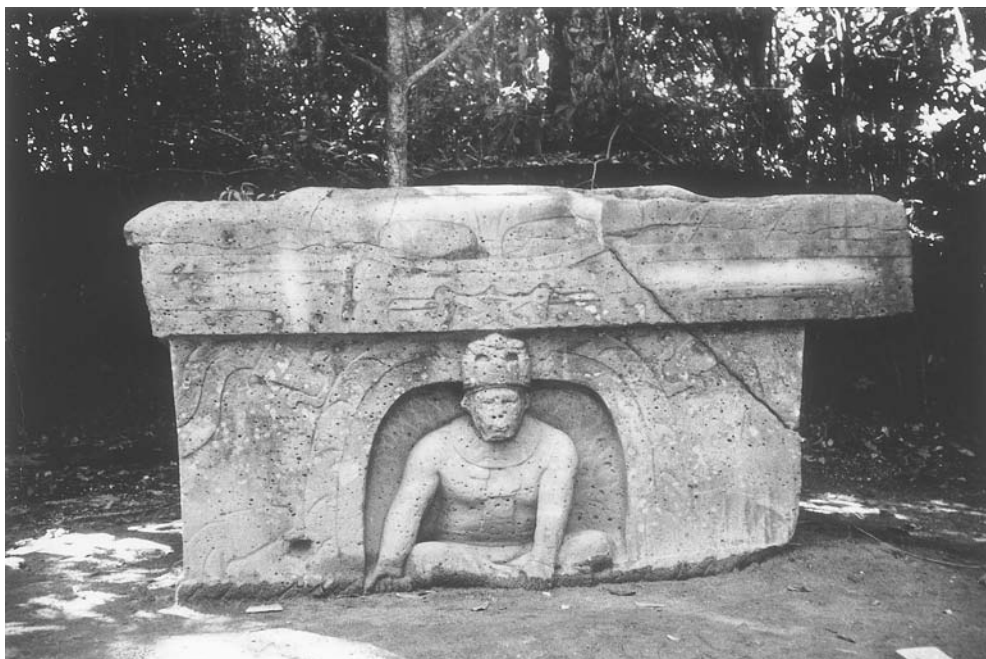


Fig. 3–9. La Venta Altar 4. An Olmec ruler sits within the niche, holding what are variously interpreted as ropes to captives or umbilical cords to his parents. Olmec altars have been conclusively demonstrated to be thrones. Moreover, at least some of these huge sculptures were later converted into colossal heads as memorials to the rulers, according to the work of James Porter. (Courtesy John A. Graham)

early Ocos horizons, or pre-Olmec remains. San Lorenzo is the only excavation from which we have adequate information on what happened to change the Olmec from a stodgy farming, “folk” culture to the dynamic, innovative civilization that it became after 1300 B.C. M. D. Coe suggests that Olmec culture essentially derives from the lowland zone, although it may have taken its crucial steps toward civilization in the Tuxtla Mountains (1968). However, recent work in that zone indicates that it was late in acquiring agricultural villages and even later in achieving some cultural complexity and that the Early Formative villages may have been seasonally occupied (Arnold in press). Several distinguished Mexican scholars have argued for the origin of Olmec culture in Guerrero, or the Mixteca of the highlands. Some have argued for a Pacific Coast origin based on the large early centers located there. Bernal, on the other hand, seems to feel that a local evolutionary origin in the lowlands is the best explanation. The latest research, limited as it is, supports Bernal’s interpretation. We shall return to this question.



Fig. 3–10. La Venta Stela 2. The central figure appears to be a ruler who is surrounded in the air by six supernatural or ancestral figures. All seem to be armed. (Courtesy John A. Graham)

Olmec Art: Sculpture and Painting

Basic themes of Mesoamerican art and religion had been set before 1400 B.C. and, according to Grove's studies, revolved around two supernaturals, the shark and the alligator (1992). Both creatures were, of course, modified to ideological standards and represent the cosmos according to Mesoamerican thought, the alligator representing the earth and the shark the sea. The latter both surrounds the earth and exists under it; thus, there is a watery underworld. A storm and water god seems to have been present as well. After 900 B.C. the elite class added the serpent to the repertoire as a symbol

of rulership. However, with certain attributes, it could also represent the interior of the earth and a conduit to it (Grove 2000a).

Cleft-headed figures in Olmec art often have cobs protruding from the cleft. Karl Taube has recently argued that these are pictures of a maize god (2000). He also argues that Olmec leadership identified itself with the sacred plant to achieve the status of divine kings, this ideology then spreading through many areas of Mesoamerica. In these neighboring regions, such as the Pacific Coast of Mexico and Guatemala, local chiefs used this ideology to transform themselves into divine kings (Clark and Pye 2000b). This doctrinal spread appears to have taken place after 1200 B.C.

Olmec sculpture is one of the most important defining elements of the civilization. Sculpture tends to be massive and is found in life-size as well as larger than life-size pieces. The sculpture is both full round and bas-relief. The enormous human heads, of which twelve are known, are interpreted by M. D. Coe as being representations of elite-class rulers (1965b). The football-helmet garb and the heavy quality of the facial features all fit Coe's characterization of these leaders as "tough warrior dynasts." Some of the sculpture is patently portraiture, as exemplified by the remarkable wooden busts recovered from the mud in front of the shrine site of Manatí (Ortiz and Rodriguez 2000). Bas-reliefs on monuments and on cliffs outside the heartland tend to be much more complex. Several general themes can be detected, including the maize (corn) god, present in several situations but most importantly in association with the four world directions and the center of the cosmos.

At Laguna de los Cerros and Rio Chiquito (near San Lorenzo), two badly damaged sculptures have been found that apparently show a jaguar copulating with a human female. These must have been some of the most eye-catching sculptures ever done when in their original condition. If the genetic anomaly spina bifida did occur in Olmec populations as M. D. Coe suggests, it might well have been interpreted by them as the result of the woman having mated with a jaguar. Sculptures on the Pacific Coast (Pijijiapan) and the Central Mexican highlands suggest marriages between Olmec and regional elites (Clark and Pye 2000b).

However, the basic deities identified by Grove are the majority representations in Olmec art. M. D. Coe's so-called "fire serpent" is actually a depiction of the "earth god." Other depictions are of the crocodile. The serpent appears in Olmec art as a symbol of rulership. The jaguar does appear, as noted above, but the animal transformed to a supernatural does not dominate Olmec art the way it does later Maya art of the Preclassic and Classic periods.

Another thematic group apparently is concerned with military activity. In many bas-relief sculptures warriors bash others' persons with clubs or simply hold clubs in threatening attitudes. Other depictions show "knuckle

dusters,” which may be what the name implies. Small floating figures above them represent several of the Olmec deities, including the maize god. It is especially interesting that one of the most explicit scenes of violence is from the highland site of Chalcatzingo in Morelos (although the excavators of this site do not necessarily agree with this interpretation; Grove 1987). This suggests not entirely peaceful means were used to control zones outside the heartland.

Petrographic and mineralogical studies leave no doubt that the basalt from which most of the major sculptures of the heartland sites are made was brought in from the Tuxtlas Mountains. This importation of stone is impressive, but in fact, the jaguar-mask ceremonial deposits at La Venta are far greater in quantity. In these caches, roughly shaped and finished ashlar of serpentine—over a thousand tons of material—were laid down in layers in specially prepared pits. On top of the La Venta A-1-C deposit was found a large mosaic mask in Olmec style with the characteristic cleft head. It has been said to represent the jaguar deity of the Olmec, but it must be something more complex because the representation seems to have four eyes. In any case the labor and amounts of material and skill expended on these deposits bespeaks sophisticated social organization and arcane ritual. The serpentine is probably from upriver, the foothills zone. All of the material could only have arrived at La Venta by being rafted along the coastal waterway and in through the Tonala River or downriver from the edges of the highlands.

Ceremonial and ritual meaning is conveyed by the remainder of the scenes, with elite-class individuals apparently participating in worship and political protocol or acting out mythic and symbolic events. These symbolic events may have been of the sort that was used as a recurrent liturgy in the centers. At least one sculpture from La Venta, Altar 4, explicitly deals with dynastic continuity and legitimacy. It is a table-top altar which, as Grove has discovered, was actually a throne. In the depiction on this monument, the ruler sits in a rounded niche on the front, holding two twisted cords that appear to be attached to two individuals on either side of the throne. Examined carefully, these two people seem to be male and female and therefore the parents of the ruler, symbolically attached to him by umbilical cords.

A certain number of footprints, bird heads, and the like—possibly prototypes of hieroglyphic writing—are present on Olmec sculptures. The most convincing case yet made for the presence of at least pictographic symbols has been advanced by Grove in his study of the probable name glyphs of Olmec rulers. These occur on the great stone heads in the headgear of each one. However, no complex inscriptions with mathematical data and dates have been found. We shall discuss the invention of calendar systems and writing in Mesoamerica in the next chapter, but it is barely possible

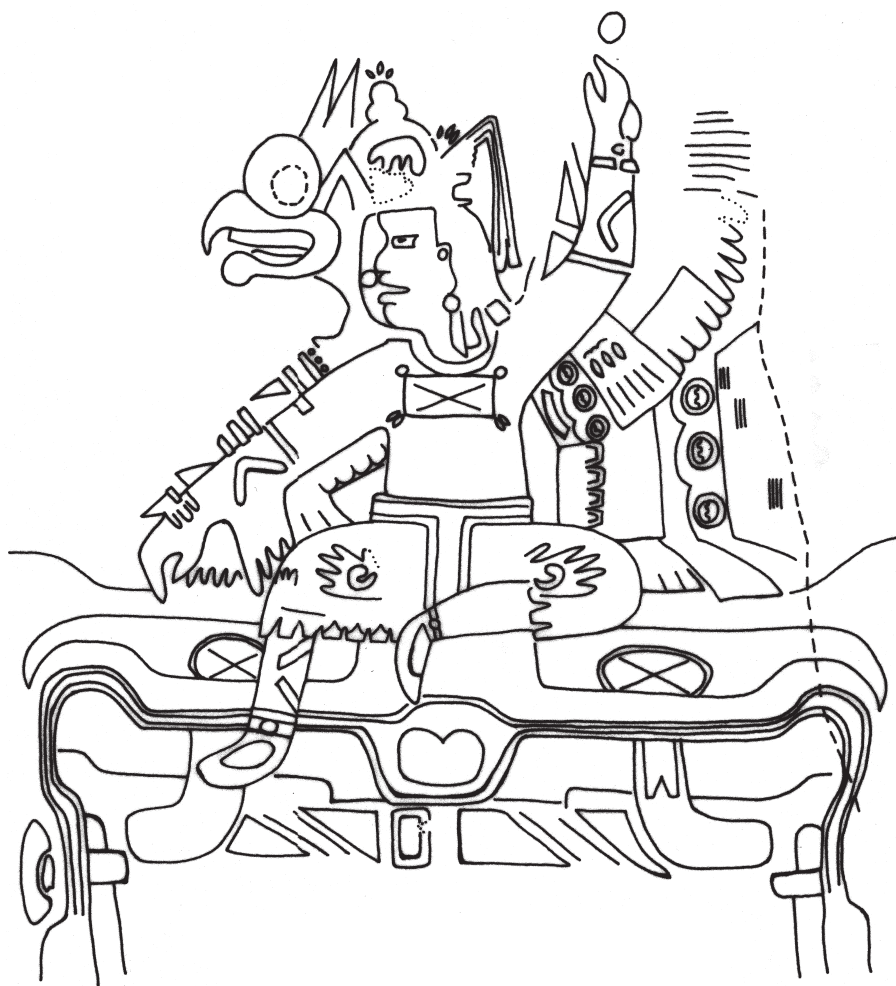


Fig. 3-11. Oxtotitlan Mural, central section. The clearly Olmec figure is dressed in a bird costume and postures while seated on one of the "altar" thrones. The cave of Oxtotitlan is in the highlands of Guerrero, reflecting the far-reaching trade and political networks of the lowland Olmec. (After Grove 1970b)

that these achievements were made during Intermediate/Late Olmec times, at least in rudimentary form.

Some remarkable murals discovered at the caves of Oxtotitlan and Juxtlahuaca show brightly colored scenes of pomp and elite-class ceremony, with a principal figure in each case seated on what appears to be a table-top altar throne (fig. 3-11; Grove 1969, 1970b). Another scene at



Fig. 3-12. Chalcatzingo Monument 14. A small lizard perches on a hill, and its exhalation forms a cloud that in turns brings rain, drops of which are seen falling on a squash vine, below. Grove notes that small lizards of this sort appear at Chalcatzingo about a month before the rains begin. (Courtesy David C. Grove)

Oxtotitlan with a dominant human figure in it has definite phallic overtones. These sacred caves are not too far from Taxco in Guerrero. Another part of the Chalcatzingo cliff sculptures shows a person on a throne within the mouth of a jaguar, which perhaps represents a cave and from which cloud symbols emerge. Small clouds hang above the cave, with rain falling from them. The image reminds one of the later Aztec beliefs that the Tlalocs lived in caves and that caves generated clouds and rain (fig. 3-12).

Olmec sculpture outside the heartland tends to be of a narrative style, depicting both the military and ritual protocol themes (fig. 3-13). Chalcatzingo has already been mentioned. Massive boulders and outcrops sculptured in place have been found by C. Navarrete at Pijijiapan (1974), which is located at the entrance to the Guatemalan coastal plain. A rather imposing set of individuals, two women and a man, are shown surrounded by what seems to be vegetation and by small human figures. It has recently been suggested that this is a marriage scene (fig. 3-14). Further south on the coastal plain at Abaj Takalik, in Guatemala, the remains of a giant sculptured head together with other Olmec remains have been found. Given the political identification of this specific form, it seems likely that this is evidence of physical Olmec presence and control, perhaps a colony. The farthest south that Olmec sculpture has been found is in the highlands of El Salvador at Las Victorias. Again, we have a boulder carving that depicts Olmec personages in a dynamic scene in which they carry either clubs or plants in their arms. The Maya Lowland area thus far has but one site, that of Xoc, with a figure similar to those of Pijijiapan. More Olmec sculpture has been found in most of these zones, but enough has been said to make the point that there is a general distribution in two very specific zones of Mesoamerica. The artifact distribution is somewhat wider but includes the zones where sculpture occurs.

Small Works of Art and Other Artifacts

These portable expressions of Olmec style were made of exotic materials, jade being especially favored. The items were apparently greatly prized by the local elites and are widely distributed. Jade was probably obtained from the Balsas Valley in Guerrero (near the sacred caves of Oxtotitlan and Juxtlahuaca), from the Motagua River valley in Guatemala (Abaj Takalik and Monte Alto are on the way to this valley), and from other as yet unknown sources. American jade is variable, with the most highly prized being apple green in color. White streaks are occasionally found in pieces of it, and the color may run to a dark, turquoise-like blue. Small figures of the maize god were a favorite motif. Highly polished axe-celts with incised designs, including what appear to be rudimentary hieroglyphs akin to certain designs found on sculpture, are also fairly common. Other, rarer forms include canoelike pieces, maize gods with wings, and "letter



Fig. 3-13. Chalcatzingo Monument 12 is a falling figure carved on a rock at the massive stone mountain of Chalcatzingo in highland Morelos. Grove believes that the figure is that of a fast-moving ball game player. It is also possible that the figure represents an overthrown ruler, because of its posture common to captives in later sculpture. (Courtesy David C. Grove)

openers,” probably used for bloodletting in religious ritual. Celts were especially favored in the heartland; in addition to the famous cache of figurines already mentioned, cruciform deposits of celts were found at La Venta, and the large numbers found at El Manatí and La Merced have already been mentioned. Most of the above-mentioned forms are also found in basalt, serpentine, and other stone.

Mary Pohl and her colleagues have found what they believe to be the first evidence of Mesoamerican writing at the small site of San Andrés, which had developed into a secondary center subordinate to La Venta. The radiocarbon date associated with the finds of one pottery roller stamp and two greenstone fragments is ca. 650 B.C., firmly in the Middle Formative (Pohl et al. 2002). Grove suggested some time ago that the individualized glyphs on the great stone heads, mainly from San Lorenzo and therefore dating from about 1200 B.C., might be early name glyphs. However, very little other material has been found thus far to substantiate the claim that the Olmec might have invented writing. No early stages of such development show up on pottery, for example, as might be expected had such a momentous development taken place. We will examine this question in the next chapter, but it presently seems that writing in a fully developed form came into being at the end of the Late Formative and more or less simultaneously in widespread regions of eastern Mesoamerica. The origins and early stages remain obscure.

Masks are especially well done. One in a private collection in Guatemala City, an extraordinary large piece of jade carved into a maize-god mask, is said to have come from La Venta. Another mask of wood, preserved by some miracle, depicts a human face and is encrusted with jade. A mask of marble is a powerful evocation of a jaguar’s face. The latter stone is possibly from the Ulua Valley area of Central America, where the material is to be found.

All of these items—celts, masks, figurines—are especially (and unfortunately) prized by modern collectors and were similarly regarded in ancient times. Apparently, many of the small portable items were held as heirloom pieces, and one is to be found in the Vatican’s collections, covered with elaborate Italian gold work. It was probably sent back by a sixteenth-century Spaniard and might have come from an Aztec source, which would mean that it had been passed down through various hands for about 2,800 years. Religious symbolism made jades even more valuable to their ancient owners, although aesthetically motivated acquisition seems to be nearly a religion in recent times.

Large hollow dolls of clay, made with baby-face features, appear consistently in graves in areas outside the Olmec heartland and as trash and discard within the San Lorenzo site. These dolls must have been exported to the Basin of Mexico and the Morelos burial site of Las Bocas, where they occur.



Fig. 3-14. Chalcatzingo Monument 21 is a stela-type monument showing a woman who possibly was from Guerrero. The carving may commemorate a dynastic marriage between a local ruler and a distant but important community in Guerrero, the latter a source of Olmec jade. (Courtesy David C. Grove)

Iron-ore mirrors, ground into concave reflecting surfaces, occur in the heartland sites, especially at La Venta and San Lorenzo. The source area of one variety of iron ore, magnetite, has been found in the Central Valley of Oaxaca, where Flannery and his associates have also located one of the villages and the houses of the specialists who made the mirrors at a site named San José Mogote. Within one of the houses of these highland craftsmen were found the characteristic hollow-doll figures. These finds add the Valley of Oaxaca as an important resource zone for the Olmec.

Obsidian from about seven sources has been detected at San Lorenzo. Mineralogical analysis shows that obsidian came from near present-day Pachuca, north of Mexico City; from Orizaba volcano near Puebla; and from as far east as El Chayal, near Guatemala City. Obsidian was important as the prime cutting tool in ancient times.

In addition to the above items, mica, schist, and flint were all imported into the Olmec heartland zone. Judging by the items found at the sites of La Venta and San Lorenzo, the Olmec should have suffered from a balance-of-payments problem, since they seem to have exported only the finished products and a few tropical and local products such as rubber and bitumen (Wendt 2003). However, we must consider the nature of the Olmec-linked sites outside the heartland before we settle on an explanation for the matters outlined above.

Olmec Contemporaries: Colonies, Collaborators, or Competitors?

Four major zones appear to be in some manner contemporary with, in contact with, or even interactive with the Olmec. From west to east, these are the Central Highlands (the Basin of Mexico and Valley of Morelos), the Balsas Valley and adjacent parts of Guerrero, the Central Valley of Oaxaca, and the Pacific Coast plain of Mexico, Guatemala, and El Salvador. Some other occurrences of Olmec-linked culture were found in southern Honduras not far from Tegucigalpa.

Basin of Mexico

Tlapacoya, located in the southeastern corner of the Basin of Mexico, was at least a large village in Late Olmec times. Its location is at the entrance to the basin that one might use if approaching it from the Olmec heartland. Excavations by Tolstoy and Paradis indicate that Tlapacoya possesses the debris to be expected of an intensively occupied village, along with certain characteristic Olmec pottery forms, including hollow dolls (1970). This episode is dated at about 1200 B.C. Across the basin and the lake, there was a contemporary village or villages now known as Tlatilco, and now under industrial Mexico City. The site is famous for its spectacular burials, of which some five hundred have been excavated. A great many more were dug up illegally, and the contents of the graves sold to collectors.

Tolstoy and Paradis's research indicates that Tlatilco has about four periods represented in its burials, the earliest of which (Nevada phase) precedes the Tlapacoya material and dates to about 1500 B.C. Tlatilco seems to have been one or more villages with perishable housing but also possessed low, one- or two-step clay platforms, which may have supported religious shrines. Burials were apparently made under the floors of houses and among the trash pits that were present. At any rate Tlatilco burials contain the characteristic Olmec hollow dolls from earliest times, as well as other exotic and putatively Olmec-like pottery. Bowls in which excised jaguar-paw designs are emphasized by red paint rubbed into them with a surrounding black slip are very similar to vessels found at San Lorenzo and La Venta. On the other hand clusters of figurines with the burials are in non-Olmec style and show many life scenes: acrobats, diviners, and women carrying babies, for example. Much else in Tlatilco seems also to be in a native ceramic tradition. The famous "life-death" bowl, which shows a live face on one half and a skull on the other side, is such a piece. Greenstone and jade artifacts (the first being the substitute for the second) are quite rare but do occur.

Tlatilco burials also seem to reflect a ranked society because of the different offerings in each grave. Women and children received large amounts of offerings; therefore, ranking probably was ascribed, since children would not have had sufficient time before death to achieve status. It is interesting and perhaps significant that there is no earlier Formative material known for the basin than this period with an Olmec linkage. It should be noted that in the later phases (1250–900 B.C.), nearly every village in the region had Olmec-like material (7 percent) as well as an overwhelming amount of regional material (93 percent; Grove 1981). The location of Tlatilco is also important, because it represents the exit point on the western side of the basin to Toluca and beyond. The commodities to be gained thereby are anybody's guess.

The Morelos Valley and Chalcatzingo

One of the most important of the highland formative sites has been published by Grove (1984, 1987). Combined with previous work in the region at other sites (for example, Grove 1974b), the resultant sequence takes its place as one of the most reliable and interesting in the highlands.

Some of the earliest village material in Morelos occurs at sites on the Cuautla River, where the site of San Pablo Panteón has yielded over two hundred burials. The ancient graves are in a stone-faced burial mound appropriately located next to a modern cemetery. Across the river is another zone with distinctive burials called La Juana. Based on stratigraphic and comparative material, Grove (1974a) says that La Juana is the older phase. Hollow ceramic "babies," spouted trays, roller stamps, black-ware

pottery, and other San Lorenzo–horizon material indicate that he is right. On the other hand the San Pablo Panteón mound produced pottery that is characteristically in a variety of bottle forms: stirrup-spouted bottles, composite bottles, belted bottles, tubular-necked bottles, and so forth. Less than 1 percent of the other San Pablo Panteón pottery has Olmec affinities, and therefore the picture is of an overwhelmingly regional development. The red-on-brown wares of both mounds also link them to western Mexico. Hollow D and K figurines of the Valley of Mexico type occur. Grove dates the La Juana material at 1100 to 900 B.C. and the Panteón pottery at 900 to 500 B.C.

Chalcatzingo's earliest villagers were few on the ground (about sixty-five), and yet the site has two public buildings dating ca. 1500–1100 B.C. Clearly the site was a regional center drawing labor from many villages. The earliest pottery includes exotic bottle sherds. The location is an unusual one, and the two peaks that jut dramatically from the plain apparently were regarded as sacred features very early in the Formative. By 1000 B.C. the villagers were building water-control contrivances and probably terracing. The terraces were residential and garden zones. By this period (Middle Formative), there was also a very large platform that later became an elite residence and burial place. A masonry replica of an Olmec altar-throne was possibly built at this time (before 700 B.C.) and later disassembled and reassembled (Terrace 25 Altar).

The most notable period of the site dates 700–500 B.C. and therefore is both Middle Formative and La Venta horizon. During this period Chalcatzingo became more than a small regional highland center, establishing definite links with the Olmec heartland. The center was not large in itself, only a big village of scarcely more than four hundred people at the most. The utilitarian pottery and figurines reflected its highland Formative past. There are also Gulf Coast elements that consist of carved stone monuments which are both freestanding and in the form of cliff sculpture. The style is fully developed Olmec and of a form that Grove (2000b) has defined as "Frontier Olmec." In this style the symbolism is more overt and spelled out, as in the most famous of the cliff sculptures, called "El Rey." In this scene a human sits on a square stool in a cave that is formed by a jaguar's mouth. The cave is decorated with depictions of the local bromeliads, which today grow in the crevices of the cliff. Clouds come from the cave and rain falls from still more clouds. There is even more rain and water symbolism in the other sculptures. Clearly, the peaks were regarded as the residence of some form of rain deity.

Eight public buildings are known, one of very large size (more than 26,000 square millimeters, or 88,000 cubic feet), which supported elite residences and were the location of elite burials. Jade and greenstone is relatively common in certain zones of the site, and jade figurines are

attributed to the site as well. Gillespie argues that a form of figurine provisionally labeled C8 is a portrait form based on the great diversity of facial types as well. She suggests that it is associated with the “cult of the ruler,” which contained an element of ancestor worship. Over twenty distinct individuals are depicted in the C8 series at Chalcatzingo. The altar-throne was an integral part of the apparatus of Olmec rulers. Some pottery forms and their motifs are reminiscent of those found in the Gulf Coast sites.

Grove interprets the voluminous data to indicate the periodic presence of Gulf Coast people at Chalcatzingo. At least iron ores and kaolin would have made the region attractive. In addition Chalcatzingo and the nearly totally looted site of Las Bocas would have controlled a suggested jade route that led west to Guerrero, where known deposits of jade occur along the Balsas River. One stela (carved erect stone) may represent a woman from Guerrero, based on unique motifs that also occur on one of four Olmec-style monuments at the newly discovered site of Teopantecuanitlan. Grove further suggests that local rulers may have gained legitimacy by adopting Olmec symbolism. The center was abandoned gradually after the heartland centers lost their uniqueness. It no longer had a function as a regional collection point for the Olmec heartland rulers, and newer regional centers fulfilled new needs and fashions in the Late Formative.

The Central Valley of Oaxaca

Flannery and his colleagues (Flannery, Marcus, and Kowalewski 1981) have considerably clarified the early phases of Oaxacan culture through a long-term project located in the Central Valley.

At least twenty villages date from the Tierras Largas phase, ca. 1500 to 1100 B.C. The first public structures were square, plastered buildings with possible step altars in them and are only found at the site of San José Mogote in the western arm of the Valley. The ceramics of this phase are of a localized tradition similar in many respects to the earlier and not too distant Purron pottery. Figurines are well modeled and common, and a few Ocos sherds occur. No perceptible contact with the Olmec is known during this period. A double palisade protecting the western edge was found. Evidence of violence and possible warfare are dated at about 1540 B.C., when a house in the village was burned (Flannery and Marcus 2003).

This Formative isolationism broke down in the San José phase (1100–800 B.C.). The village of San José Mogote grew considerably and became a regional center, with an estimated maximum population of seven hundred people. Households have been found within the village that were occupied by part-time specialists who made concave iron-ore mirrors of the type found at La Venta. Ornaments were also manufactured of shell and mica. There is little doubt about social ranking; burials reflect considerable difference in status, especially in the access to jade or greenstone. San José

ceramics carry Olmec-like iconography. The crocodile and shark motifs were used on different types of pottery. Careful and intensive excavations have revealed that there were east and west barrios in the village and that these used black-and-gray pottery with “earth serpent” motifs. The north and south divisions of the village used white pottery with crocodile motifs. Flannery and his colleagues conclude that the motifs were symbols of descent groups, perhaps clans. This is a regionalized use of an imported symbolic system, probably for a function quite different from that intended in the origin area. However, the symbols were also of potent social and religious value, which is probably the reason why they were adopted.

No Olmec presence is either suggested or plausible at San José, unlike Chalcatzingo. Distribution patterns of iron used to manufacture the exported mirrors suggest definite wealth differences among the communities and among people within the communities of Middle Formative Oaxaca. Thus, it may be that status differences were created or exacerbated by Olmec contact, no matter how indirect.

The Guatemalan Pacific Coast

A long and detailed sequence has been painstakingly developed in the Mazatan region of the Mexican coast, near the present-day border with Guatemala. John Clark and Mary Pye have produced a synthesis of the data and its interpretations (2000b). The first villages appeared ca. 1700 B.C. and were organized by local leaders (chiefs) who lived in larger than normal houses. Corn was raised but was not a major staple. By 1500 B.C. population had increased and the villages had become more numerous, organized into networks around larger villages. One chief even had a court for the ball game measuring 80 meters (264 feet) long. Major changes came about in a hundred-year period (1200–1100 B.C.) as a result of influence from the Olmec area. Pottery changed drastically, as did figurines, and sculpture appeared for the first time, all elements being in Olmec style. One major site, Paso de la Amada, seems to have been a sort of capital for the local ruler. A long period of prosperity and success followed, but by 900 B.C. San Lorenzo was gone, and the Mazatan high chiefdom fell apart. About 850 B.C. a revival took place with the introduction of the corn cult and the idea of divine kingship. La Venta was the major center in the Olmec heartland at this time, and a great many Olmec small objects decorated with sacred symbols and pictures were exported to zones such as the Mazatan region. Elite intermarriages took place. The small kingdoms proliferated down the coast.

The two sites of Monte Alto and Abaj Takalik are located on the Pacific coastal plain of Guatemala. Monte Alto has so far produced only information, which implies that the place is a small-scale and not too impressive attempt to replicate the Olmec ceremonial centers of the heartland. A fairly

intensive occupation is indicated by the heavy deposits of ceramics and other debris in association with large sculpture.

The analysis and writeup on the Abaj Takalik project is still in progress; however, very substantial platforms and a long series of sculpture in distinct styles suggest to the excavators that the site is more than ordinarily important in the Formative. The ceramic sequence opens in Early Formative Ocos and continues into the Late Classic period. Public architecture dates at least to the Middle Formative and possibly earlier (Lavarreda and Orrego 2002). Several new sculptures have been found, and J. Graham suggests that two are "Proto-Olmec" in style; however, stratigraphic evidence is lacking to confirm this. One large sculpture seems to be the recarved remains of a colossal stone head (J. Graham, pers. comm.), and if this is the case, it might imply rulership by an Olmec governor at Abaj Takalik. On the other hand it might also imply a common iconography of power among the regional centers of the Pacific and Gulf coasts. It should be noted that the giant stone head at Abaj Takalik was recarved into an earth monster's (serpent's) mouth containing a human.

Grove believes that the passage along the coast was probably a jade-cacao trade route. Ultimately it leads to the Motagua Valley and its jade boulders and the recently discovered ridge source above the valley. There is, as well, the enigmatic fortress of Los Naranjos near Tegucigalpa, Honduras, which is associated with pottery carrying the were-jaguar and earth-serpent symbols (Baudez and Becquelin 1973).

The Southeastern Lowlands

The pleasant and fertile valley of Chalchuapa (El Salvador) is open to the Pacific coastal plain through the Ahuachapan Pass. A long sequence of cultural development has been defined by R. J. Sharer (1974), but only the Formative phases concern us at this point.

An early complex, Tok, dates from about 1200 to 900 B.C. It has close affinities with Cuadros-affiliated complexes but no specific Olmec linkages. In other words it is not linked to the San Lorenzo horizon of Olmec expansion. Sharer comments that Tok was a part of Gareth Lowe's expanding lowland, maize-cultivating tradition. These earliest inland populations apparently were colonists from the coastal plain.

The Colos ceramic complex (900–500 B.C.) is tied to the La Venta horizon by specific ceramic types. White-rimmed black ware, polished black pottery, and streaky gray and white to buff pottery, as well as specific Olmec motifs, were found. A large pyramidal structure at Trapiche was built to the imposing height of at least 20 meters (about 65 feet). Cacao, hematite, and Ixtepeque obsidian were desirables attracting the Olmec. Twenty-five kilometers (15 miles) away at Ahuachapan, finds have been

made of serpentine and jade Olmec figurines, indicating that there is probably an Olmec-linked regional center of the Chalcatzingo–Las Bocas variety there. Although the Olmec presence is impressive, and Sharer thinks that it stimulated cultural evolution, it is not massive. Grove's trading-station model seems to fit the Salvadorean situation well.

The Maya Lowlands

Only a few hints of Olmec linkage come from the Maya Lowlands as yet. One is the already noted cliff sculpture at Xoc (unfortunately destroyed by greedy looters). Another is the jade "letter-opener" (bloodletter) found in Xe phase (ca. 900 B.C.) at Seibal. The sculpture at Loltun Cave is no longer convincingly Olmec in style now that we have better knowledge of both heartland and frontier varieties. No Olmec motifs show up in the Xe-sphere ceramics (dating to ca. 900 B.C.) of the southern lowlands. However, the northern lowlands of Chiapas are poorly known except for the large sites, and it may be that some surprises await us. A general review of the Maya can be found in chapter 5, where it is noted that Hansen believes the early Maya Mirador state (ca. 250 B.C.) may have been competitive with La Venta in the Late Formative and, moreover, that it had something to do with La Venta's ultimate demise.

Social and Political Implications

It is at this point that some of the most controversial problems of the Olmec arise. Economic and ritual motivations for the establishment of ties with all four areas noted above can be suggested. Obsidian and jade came from the zones around the Basin of Mexico and the Valley of Morelos, and access was by passage through these highland areas. Iron ores made into mirrors came from the Valley of Oaxaca, and those from the Valley of Morelos were made into cosmetics. Kaolin for fine ceramics came from several areas, including the zone around Chalcatzingo. The Guatemalan-Chiapas Pacific plain produced the best and largest quantities of cacao in all of Mesoamerica. This area, known as Soconusco in Aztec times, was conquered by the Aztec to assure control of that very valuable commodity. There is an emphasis on cacao in Late Formative art of this coastal shelf. In addition the corridor led to sources for obsidian and jade from Guatemala.

In order to make some sense out of this material, it is necessary to reconstruct the social fabric of the Olmec heartland itself. It seems clear that later Olmec society was stratified, with an elite or upper class that is depicted on the sculptured monuments. This elite engaged in religious ritual, warfare, and economic activities, judging by the depictions of them in action. They commanded sufficient labor to accomplish the building of such large large monuments as the C-1 platform (which may have a buried

stone superstructure) at La Venta and the immense construction work of the artificial plateau at San Lorenzo. They also defined and commanded economically and ritually valuable commodities such as jade, magnetite, obsidian, probably cacao, and other perishable items. Socially significant, they commanded the services of craftsmen so skilled that they must have been full-time specialists by San Lorenzo times.

We therefore get a picture of Olmec society in the heartland as possessing an upper class, a group of artisan-craftsmen, and a mass of population of lower status. There are also at least three, and perhaps more, levels of communities. Symonds defines seven levels of sites in her studies, including seasonally occupied *islote* (camp) sites (2000). These characteristics are very close to those defining a state-level society, one of the primary features of a civilization. If this reconstruction is correct, then the Olmec set a general pattern of stratified social organization that reappears among the Classic Maya, and thus it may have survived until about A.D. 900.

Olmec centers in the heartland, particularly the largest centers, probably acted as political capitals, nodes of economic exchange, and religious pilgrimage centers. There is evidence that San Lorenzo achieved regional dominance lasting for three hundred years and then failed. A poorly understood hiatus seems to have occurred, and then La Venta rose to dominance and influence. M. D. Coe thinks the implication of these data is that the religious and political capitals were moved (1970). It appears that San Lorenzo was the earliest, followed by La Venta and finally Laguna de los Cerros.

The relationships of the Gulf Coast centers to the contemporary cultures of highland Mexico are clearer now that recent research has been published. M. Covarrubias saw the situation essentially as one in which the Olmec were derived from Guerrero, colonized the heartland zone, and then developed their pattern of civilization, which was adopted and adapted by all succeeding cultures in Mesoamerica (1946, 1957). Bernal saw the various Formative villages of the Mesa Central area (Tlatilco, Tlapacoya, Chalcatzingo, and Las Bocas) as being colonies of Olmec contemporary with non-Olmec peoples who were living at small villages such as El Arbolillo in the Basin (1969). These views are now superseded by the latest evidence, which indicates contemporaneity with the Olmec and some sophistication in these villages and regional centers, but not subordination. Chalcatzingo, indeed, seems to have been occupied periodically by Gulf Coast elite, but local and regional control was predominant.

Studies by linguists L. Campbell and T. Kaufman indicate that Mixe-Zoque is a likely candidate for the Olmec language (1976; G. Lowe 1977). This language group occupied much of the Pacific coastal area, with Maya speakers to the east. Eventually, Mixe-Zoque groups were pushed off the coastal plain by Maya speakers.

The Olmec and Their Role in Early Evolution of Complex Cultures

Olmec culture was precocious and advanced, and it undoubtedly influenced many later cultural developments. However, it existed, as we have seen, in the context of lively, vigorous general cultural developments over Mesoamerica as a whole. This process produced many known regional centers in the Early and Middle Formative and, no doubt, many that are yet to be found. Flannery (1968) and Grove (1987) have both argued strongly for a crucial role for these highland centers in an interactive relationship with the centers of the Gulf Coast. There is now little doubt that this interaction existed and that it was as important to the Olmec as to their neighbors. That being said, however, it is not viable to go to the other extreme and argue that the Olmec were simply another player in a game that had several participants of near cultural parity. The comparisons that have been made between the amount of public-works construction accomplished in the Gulf Coast centers and those done at San José Mogote or Chalcatzingo make it clear that there was a difference of magnitude and that it heavily favored the Olmec. The immense amounts of earth moved, the number of platforms erected, the tons of stone moved and sculpted, and the treasuries of valuable materials at the Gulf Coast centers have no parallel or match in the highlands or on the Pacific Coast. To draw an analogy, small sixteenth-century cities such as Norfolk, England, while charming and lively, could not hope to match the resources drawn upon by London.

The preferred view of the Olmec taken here then, is that the Olmec indeed did have cultural priority in Mesoamerica as a whole. They probably did develop and diffuse much of the cultural equipment utilized and reformulated in later cultures. On the other hand, like any other sophisticated culture, they had no inhibitions about adopting good ideas and new fashions from their neighbors. Therefore, interaction among the regional cultures of Mesoamerica on economic and cultural levels was as important in the Early and Middle Formative as in later times. The symbiotic relationships and interstimulation among these cultures were probably the most important factors in keeping up the evolutionary momentum of civilization in Mesoamerica.

It has already been seen that this interaction pattern was in existence in the preceding periods of the Archaic and was crucial in the development of agriculture. G. R. Willey has suggested that the crucial role of the Olmec was to provide a vehicle for intensifying and accelerating that interaction, thus bringing many more areas of Mesoamerica into the process of evolution of civilization (1962). He suggests that Olmec religion was a major motivation for this step-up in interaction patterns. This might be called the "Canterbury Tales" theory. Olmec religion seems to have been a powerful ideological force and one that inspired a missionary fervor among its

adherents. This appears to have been especially strong in the maize cult and its relation to divine kingship. The proselytizing may have included a kind of church-militant that used force for conversions as well as for attaining the resources necessary to maintain the prestige of the main centers of Olmec religion. More likely, however, local elites seized the opportunities for self-aggrandizement. The pattern of pilgrimages to the lowland centers by culturally and ethnically diverse peoples can be inferred from the archaeological record.

All the above fits a pattern that is somewhat like the historically recorded spread of Islam as a religious, cultural, and political movement. Persons traveling to religious centers exchanged ideas, goods, and even genes. This idea of a spiritual motivation to cultural evolution in Mesoamerica is particularly appealing because it was important in later times and because it has become apparent that cultural ecology does not give a full explanation. Irrigation farming, leading to population growth, thence to urbanism, and thus to civilization is too mechanistic a scheme to explain all of the data, even as incomplete as they are now.

Thus, Mesoamerica was formed by the interaction of various early cultures of which the Olmec became, for a time, an orienting and organizing force, pushing a variety of cultures to new high points of development. The resulting patterns were regionalized and carried on. In the highlands there seem to have been still further qualitative developments in social organization. These were based in part on large numbers of people supported by irrigation farming. The Lowland Maya seem to have carried on Olmec-style cultural patterns until a new influence caused a somewhat radical change at the beginning of the Classic. From this point of view, Olmec culture did not die out but was absorbed and passed on in transformed variations. It is to the evidence from the Late Formative and the bridging cultures between Middle Formative cultures and their inheritors that we will now turn.

CHAPTER 4

THE LATE FORMATIVE

Development of Regional Cultures and Civilizations

*In the year and in the day
of obscurity and utter darkness,
before there were days and years,
the world being in deep obscurity,
when all was chaos and confusion,
the earth was covered with water,
there was only mud and slime
on the surface of the earth.
At that time . . .
there became visible
a god who had the name I-Deer
and the surname Snake of the Tiger.
These gods are said to have been the beginning
of all the other gods.*

Mixtec origin myth in León-Portilla 1969, 55

*Those who carried with them the black and red ink,
the manuscripts and painted book, the wisdom.
They brought everything with them, the annals,
the books and song and their flutes.*

Sahagún in León-Portilla 1969, 10

*Their dwelling place was as follows: . . . in the middle of the town
were their temples with beautiful plazas, and all around the tem-
ples stood the houses of the lords and the priests, and then [those of]
the most important people. Thus came the houses of the richest and
of those who were held in highest estimation nearest to these, and
at the outskirts of the town were the houses of the lower class. And
the wells, if there were but few of them, were near the houses of the
lords; and they had their improved lands planted with wine trees
and they sowed cotton, pepper and maize, and they lived thus close
together for fear of their enemies.*

Landa 1941, 62

THE RICHNESS OF VARIATION among Mesoamerican high cultures has its roots in the Formative period. This variety of cultural texture and pattern reaches back to the Early Formative but becomes more pronounced as one moves forward through time to the cultures that succeeded the Olmec and their contemporaries. At this point in our archaeological rediscovery of these ancient predecessors of the Maya and Aztec, it is clear that there are several clusters of Formative cultures. In their areal distribution, these clusters are nearly templates for the major Classic civilizations. At least six clusters can be defined at present: the Isthmian block, the Maya Highlands, the Oaxacan, the Maya Lowlands, the Central Plateau, and the West Mexican. The Isthmian cultures appear to be related to the Olmec, albeit obscurely in some cases. They have sometimes been called the *epi-Olmec*, largely because they were all thought to share an art style that was derived from the Olmec—the Izapan. Recent work has shown that at least four distinct traditions were present in the Isthmian zone, and so the term *epi-Olmec* has been discarded here in favor of regional labels. The early Lowland Maya, like the Central Plateau and West Mexican cultures, seem largely to have gone their own way without strong direct heritage from the Olmec themselves. Like the Olmec earlier, they developed their own florescences largely on the basis of in-place evolution. Before examining the individual clusters of cultures, we should observe that not all of them achieved civilization status during the Late Formative or even the Classic period. Culture in parts of the Isthmian Zone retrogressed, and the West Mexican cultures waited for a further circumstance before they evolved to more complex forms.

The Isthmian Culture Cluster

As during the great days of Olmec florescence, the Isthmus of Tehuantepec later formed an avenue of communication between the Gulf Coast plain and the Pacific slope of Guatemala. The Late Formative cultures in the zone are linked by art styles that seem to show commonalities in symbolism but distinctly regional aspects as well. This group of art styles was formerly called Izapan, from the site of Izapa, where great numbers of monuments occur. Studies by the New World Archaeological Foundation have shed a great deal of new light on this site and period (Norman 1973, 1976; G. W. Lowe, Lee, and Martínez 1982). It now appears that Izapan sculptural style is essentially confined to the site from which it takes its name. Other sites with similar sculpture can be regarded as either Olmec derived (Cerro de las Mesas) or relatively independent regional developments (Abaj Takalik, Kaminaljuyu, Chiapa de Corzo). The regionalism of these sculptural patterns is also reflected in other aspects of the cultures. Thus, we have a Late Formative continuation of the patterns established a thousand years before, those of regional cultural evolution. These processes and regions were linked by commonalities and, occasionally and more intensively, by

a particularly vigorous and precocious culture, the Olmec formerly and the Izapan and Highland Maya latterly. Instead of domination by one locality or area, we have a series of regional cultural traditions that interacted, played on one another, and yet maintained their own distinctiveness.

Olmec-Derived Cultures: Cerro de las Mesas and Tres Zapotes

Cerro de las Mesas is located on the northern edge of the Tuxtlas Mountains, in the former Olmec heartland. Tres Zapotes is about 80 kilometers (50 miles) away. It is at both of these sites that we have the most direct continuation of the Olmec artistic tradition. Earthen platforms were built around plazas, stone monuments were erected, and about the final century B.C., a calendar system was devised.

Cerro de las Mesas may date to 600 B.C. or before. Unfortunately, the site was excavated with less than rigorous methods, and there is confusion about the sequence of pottery, burials, and other minutiae that archaeologists use to sort matters out. It may well overlap with G. W. Lowe's Olmec periods (1200–300 B.C.), but clearly the Cerro de las Mesas site represents a culture related to the Olmec—one that survived the closing of the older centers and bridges the evolutionary gap between the Olmec and the Classic civilizations. At the moment, however, the evidence is fragmentary, elusive, and tentative.

A ceremonial deposit (cache) of 782 jade and stone pieces was found at the site (Drucker 1955), of which Ignacio Bernal considers only four to be Olmec in style; they may well be heirloom items buried a long time after their manufacture. Most of the items are ear-spools, beads, and other personal jewelry. A burial in a small platform produced a magnificently carved turtle shell, which has as its principal motif the “long-lipped god.” This same deity is found on the Izapan-related sculptures. Some of the sculptures at the site also reflect the later style of transformed Olmec heritage, with seated and standing figures of rulers associated with religiously powerful symbols, which no doubt lent greater authority to those rulers.

At nearby Tres Zapotes there is evidence of early writing, with Stela C probably representing the earliest found example of bar-and-dot numerals. Until recently, the date (32 B.C.) was somewhat in doubt, because the top of the notation was missing. The missing part has been found and fully justifies the reading that M. W. Stirling, the discoverer, made in 1943. Taken together with the date of 99 B.C. on a small jade carving, the Tuxtla statuette, Stela C makes it certain that a complex calendar and notation system was in use in the former Olmec zone by 100 B.C.

Elsewhere, a recently discovered monument found at the bottom of the Acula River, La Mojarra Stela 1, has a very long text of about 550 hieroglyphs (Winfield Capitaine 1988). Two dates on it, reading A.D. 143 and 156, are calendrical notations in the Maya system. The human figure

on the stela is in the Izapa style, and the headdress is very similar to that on Stela 11 at Kaminaljuyu, near Guatemala City. This monument was apparently associated with a set of as yet unexcavated mounds along the edge of the river. La Mojarra Stela 1 was probably in an area of the site now destroyed by the cutting of the river. The text, which has been convincingly deciphered by linguists John Justeson and Terence Kaufman (1993), reveals that the language is pre-*proto-Zoque*. The latter is similar in linguistic ancestry to modern *Zoque*, as the Old English of the Anglo-Saxon Chronicles is to modern English.

Briefly, the text tells of a ruler's struggle for power, involving several battles, one of these with his brother-in-law. The latter was probably beheaded. Animal-spirit companions are mentioned, and a linkup to a major animal spirit is an important event in the ruler's saga. Animal-spirit companions are a religious concept that still survives in the Maya Highlands (Vogt 1969). The name of a shaman is mentioned twice, and this person is known from the long-known Tuxtla statuette, which is a small jadeite figure with a duckbill mask and with a date of about 99 B.C., as noted above.

As will be seen, an early stela on the Pacific Coast at Abaj Takalik, likely dates to the last century B.C. On the other hand, the oldest known monument in the Maya Lowlands proper is presently Tikal Stela 29 (A.D. 292), although earlier indications of writing in the Maya Late Formative have been found in the past few years, including the recent discovery of script with a very early mural from San Bartolo in Guatemala. This will be discussed in chapter 5.

Izapa

Across the Isthmus and down the Pacific Coast from Tres Zapotes and Cerro de las Mesas is the large center of Izapa, where there are more examples of Late Formative regional art than anywhere else in Mesoamerica (fig. 4-1). Izapa had its beginnings in the Early Formative as an Ocos village and then became a small regional center. Its great period was the Guillen phase (300–50 B.C.), when it became a major regional center. Eventually, it comprised eight courtyards of major architecture covering about 3.6 square kilometers (1.4 square miles), with a total of about 250,000 cubic meters (8.83 million cubic feet) of material. Boulder-faced clay platforms were arranged around each courtyard, each with its suite of stone monuments, which include stela/altar combinations, miscellaneous sculptures, and three thrones. There are 253 known stone monuments at Izapa, of which 119 were carved.

The groups and the structures in them are oriented to solar solstices, equinoxes, and lunar risings and, above all, the impressive bulk of the huge Tacana volcano nearby.



Fig. 4-1. Izapa, Chiapas, Mexico. This Formative site is made up of many mounds groups, of which this (F Group) is one. Izapa Stela 67 (fig. 4-2) is located here, out of sight to the right. (Courtesy Margaret N. Bond and Franklin C. Graham)

Residential and ritual function are apparent in each group. The lower platforms apparently were intended to support elite residences built of timber, plaster, and thatch. Stone drains carried off the heavy rainfall of the region (in September 1988, over 25 centimeters [10 inches] of rain fell in nearby Tapachula in three days). Stone sculpture included basins and other water-related devices. A large group of monuments is located on a small peninsula by the Izapa River, and water is also a strong theme in the sculptures.

Linguistic studies by L. Campbell and T. Kaufman (1976) indicate to them that Izapa was Mixe-Zoque until the Postclassic, when their Maya neighbors took over the region. It will be recalled that Mixe-Zoque was probably the language of the Olmec centers.

Over the period of 250 years comprising the Guillen phase, there was probably a shift in Izapan symbolism. However, the basic underlying concepts seem to have remained the same through this time. G. W. Lowe, T. A. Lee, and E. Martínez see an “orderly passion for commemorating cosmological or religious precepts with appropriate rituals” (1982, 307). Periodically the courtyards were enlarged and the monuments reset. This ties in with the use of a ritual calendar in connection with agricultural and solar/lunar ceremonies. Lowe, Lee, and Martínez feel that the Izapans avoided the glorification of divine rulers that is so important among the later Classic Maya. Instead, they celebrated creation, fertility, cycles of life, and astronomical events.

The pictorial aspect of Izapa “narrative-style” art appeals readily to those unfamiliar with the iconography of more arcane Mesoamerican styles. Animals, gods, and humans are combined in scenes of action. Storm gods gather water and release it; jaguars are captive participants in human rituals; bird gods fly through the sky; gods in canoes ride over waves beneath which swim realistically depicted fishes (fig. 4-2); other gods descend headfirst from heaven; seated humans tend incense burners; a warrior decapitates an enemy. These apparently straightforward depictions, however, had deeper symbolism. Stela 5 depicts a ceremony engaging several persons and dominated by a huge tree. The tree has been named “the tree of life” and possibly represents the great ceiba tree, which in later Maya mythology was thought to hold up the heavens. Lowe, Lee, and Martínez interpret this monument as depicting creation.

Jacinto Quirarte (1973) has pointed out that among other elements that appear later in Classic Maya art is the double-headed monster figure (Stelae 5, 7, and 12). It is now problematical whether this form derived from a general iconography in eastern Mesoamerica or from Izapa’s having had some ancestral role in the creation of later Maya art.

Izapa also lacks the dates and writing that are such a characteristic of the Cerros de las Mesas art or the contemporary and slightly later monuments

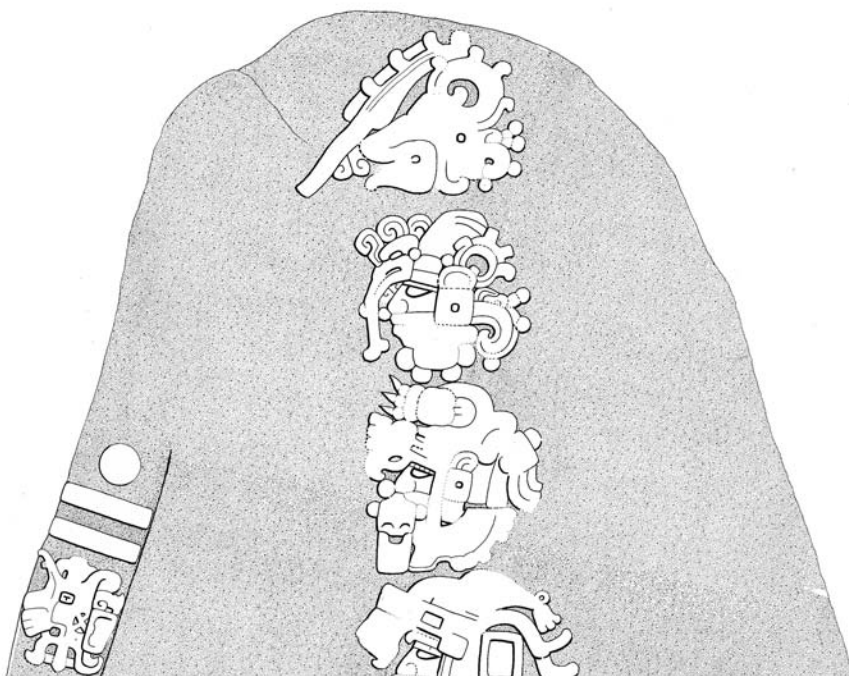


Fig. 4-2. Stela 67, Izapa. A supernatural being or a human with a fish mask rides in a canoe upon sacred waters.

at Kaminaljuyu. This would be consistent with the excavators' interpretation of Izapa as a residence for priest-rulers and their acolytes and as a center for pilgrimages. Incense burning and the ritual deposition of large amounts of valued materials were parts of the liturgy. Large numbers of people built and sustained Izapa and probably a large number of other communities with formal architecture as well. Other, uninvestigated sites in the vicinity are of the same age and have several courtyards with buildings, but they lack monuments. On the other hand, secular matters were not entirely ignored (aside from agriculture), because Izapa Group H has a very large plaza quite suitable as a marketplace. Later, and probably at that time as well, cacao was one of the most important crops, and traders came from long distances to acquire it. Izapa could have been the location for such commerce.

Abaj Takalik

Projects directed by John A. Graham and Miguel Orrego C. (1988) have given us new information on this large regional center, which flourished

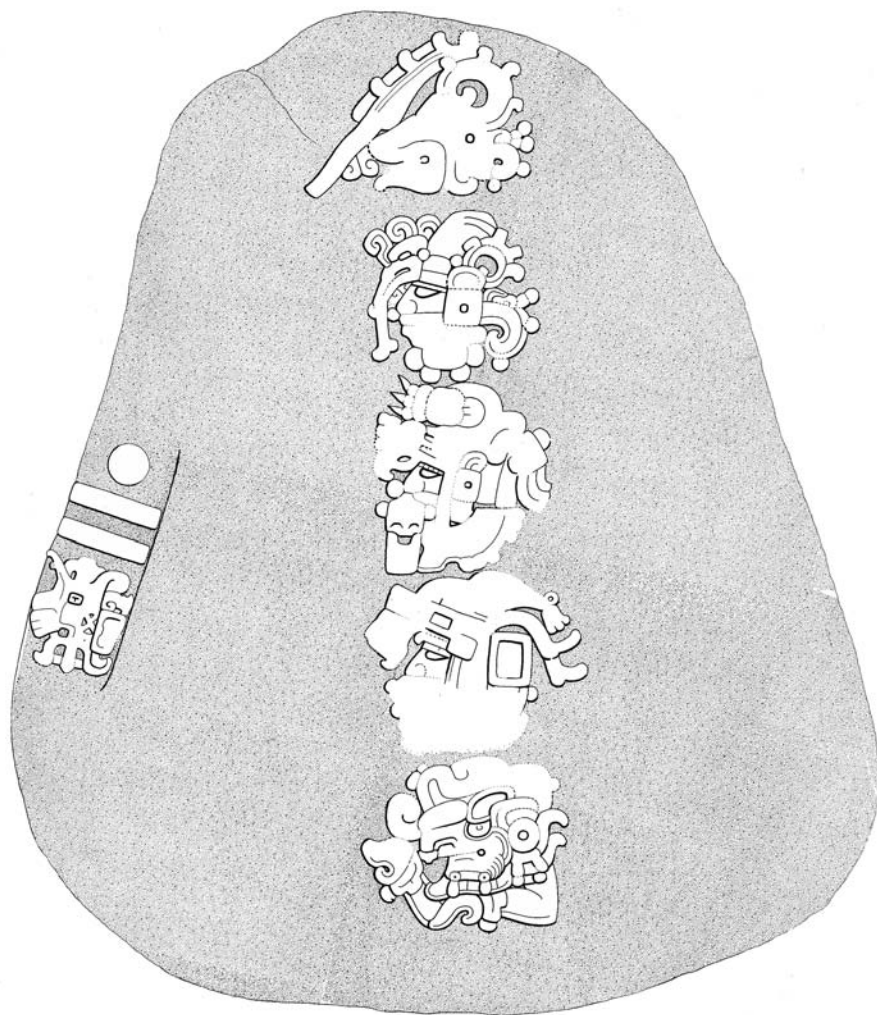


Fig. 4-3. Monument II at Abaj Takalik on the Pacific coastal plain of Guatemala. Possibly one of the earliest dated monuments in Mesoamerica, according to John A. Graham. (Courtesy James Porter and John A. Graham)

from the Early into the Late Formative (fig. 4-3). There are stelae of undoubted Maya style, of which Stela 2, from the last century B.C., dates the latest. Stela 5, better preserved, dates to about A.D. 126 (figs. 4-4, 4-5; J. Graham 1978). Abaj Takalik and about ten other centers shared the coastal zone, each about ten kilometers (over 6 miles) apart and about

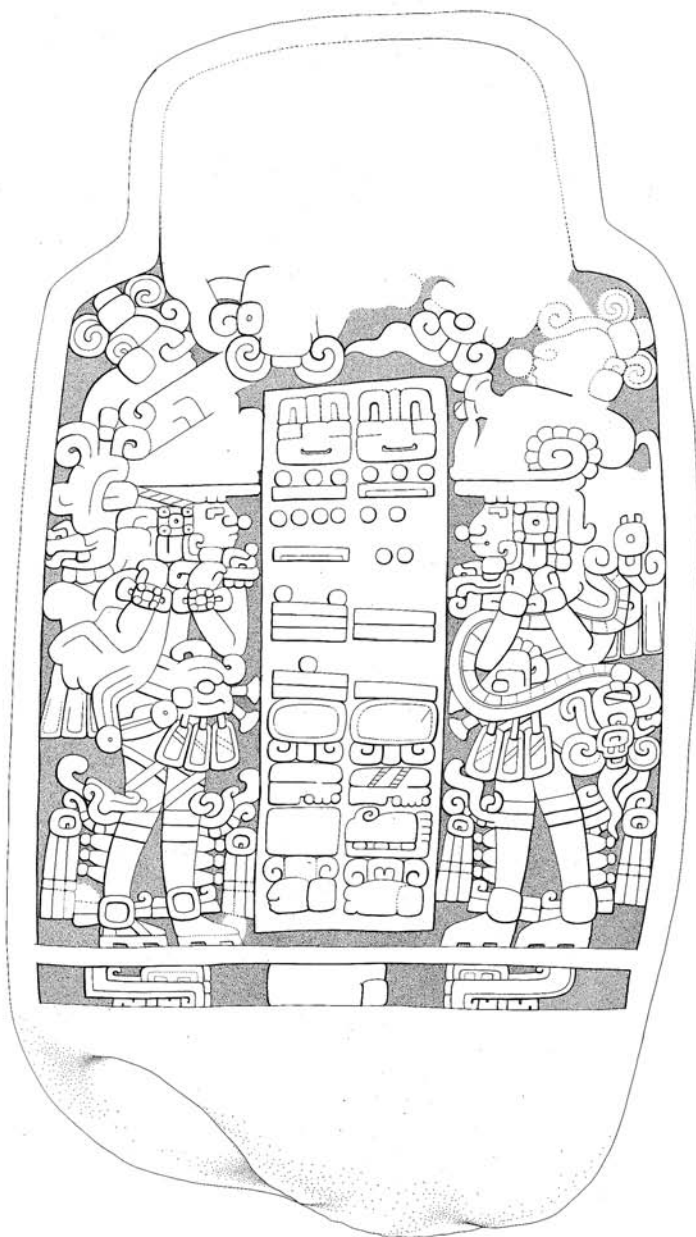


Fig. 4-4. Abaj Takalik Stela 5, a very early dated monument in Maya style. The two dates are respectively, left, 126 A.D. and right, 103 A.D. (Courtesy James Porter)



Fig. 4-5. Abaj Takalik Stela 3. Note the similarity in the basal band and position of the feet to those same elements in Stela 5 (fig. 4-4). (Courtesy John A. Graham)

thirty-five kilometers (about 20 miles) back from the coastline. These appear to be principalities—that is, small early states—in which the leadership carried on the tradition of corn-god rulers. Altar 12 at Abaj Takalik seems to show a line of such rulers, with thrones, corn symbolism, and references to the four corners of the cosmos.

El Baúl

El Baúl, a nearby site in the piedmont zone of the Guatemalan south coast, has produced a stela that has been read by M. D. Coe as dating about A.D. 36, which is very early indeed.

Kaminaljuyu

Kaminaljuyu is an enormous site that rapidly disappeared under the edges of modern Guatemala City in the mid-twentieth century. Fortunately, there is now a national park that preserves much of interest. Also fortunately, the Carnegie Institution of Washington during the 1930s and 1940s and the Penn State project of the 1960s and 1970s preserved a rich haul of data that otherwise would have been lost forever. Among the most crucial of the information gained from Kaminaljuyu is the long sequence of local sculptural expression. At this site it appears first in variable boulder pieces. The sculptures depict fat men, “pot belly sculptures,” which are perhaps as early as the late part of the Middle Formative (ca. 300 B.C.; fig. 4-6).



Fig. 4-6. Miraflores-phase sculptures from Kaminaljuyu. These “Tweedle Dee and Tweedle Dum” pieces may represent surrogate worshiper figures designed to permanently accompany a major sculptured sacred image.

These sculptures are regional in style, and their closest counterparts are mainly on the nearby south coast of Guatemala. Carved and uncarved angular pieces of basalt are from the Late Formative. Finally, the Kaminaljuyu tradition flowered into an exuberant and unique expression that includes depictions of “squashed frogs” (*ranas aplastadas*), silhouette sculptures of extraordinary complexity, and formal erect shafts that are clearly stelae, although most of them do not carry hieroglyphic texts. The late Preclassic extraordinary sculpture known as Kaminaljuyu Stela 11 shows a barefoot individual otherwise richly attired, standing between two blazing incense burners. Incense burners of precisely the same type are to be seen on stelae at Izapa.

Stela 10, in the same excavation as Stela 11, is an equally interesting sculpture made of dense black basalt. In spite of the difficult stone, the skill of execution is high and the three human figures depicted in relief are among the best in Mesoamerican art. Great virtuosity is evidenced by the treatment of the feathers flowing from a back frame on the lefthand figure. Stela 10 also has a rather long hieroglyphic text, which is incised to the side of a large relief-carved glyph. Unfortunately, the stela was smashed in ancient times, and in any case the glyphs are indecipherable at present (fig. 4-7). They resemble those on the newly found La Mojarra Stela 1 from the Gulf Coast. This regional style is apparently due to a combination of indigenous development and interaction with Izapa and other centers, the same processes that operated so often, early and late, in Mesoamerican prehistory. Judging from similar features of later Classic Maya Lowland stelae, it seems probable that these monuments partially memorialize temporal rulers and that the inscriptions may give some historical data about them. In later times, succeeding rulers often smashed the monuments of their predecessors.

As indicated above, Kaminaljuyu's beginnings are about 800 B.C., or Middle Formative, the time of development of so many other regional centers. All data suggest that the Valley of La Ermita (Guatemala City's present location) was occupied by a series of small villages, some of which might be classed by 500 B.C. as small regional centers. Thanks to the work of William Sanders and his associates, we now see that the settlement patterns and arrangements of ceremonial centers reflect what may be clan or lineage centers. Each of these dozen known groups possessed what appear to be temples and burial mounds around which were gathered small clusters of population (Michels 1979a, 1979b; Sanders and Michels 1969). The implication is that these were petty chiefs or leaders of kinship groups, with their ceremonial life focused on funerary and religious monuments. The platforms and buildings were supplemented by the carved and uncarved stones set in front of or on them.



Fig. 4-7. Miraflores-phase sculpture from Kaminaljuyu. A fragment of Stela 10, a magnificently conceived and carved basalt slab. (Courtesy William R. Coe III)

By the *Miraflores phase* (100 B.C. to A.D. 200), five of these centers had grown to be major regional centers around which clustered the hamlets and houses of the kin group members. J. Michels (1979a) believes that by 100 B.C. these groups represented Polynesian-style chiefdoms, each of which was divided along lines of duality (moieties), a classic and reasonably common traditional social structure. They also imply a rather loose political organization based on kinship and marriage ties among the local important families. Outside contact is indicated by the presence of Usulután pottery, which has its apparent origins in what is now El Salvador. Total population for the valley is estimated at three thousand to six thousand people. However, it is likely that many more people were involved in the Kaminal societies. Sanders and his colleagues ignored some vital data in their calculations.

Guatemalan scholars Carlos Navarrete and Luis Lujan have studied the base of the colonial aqueduct and concluded that the base of this formidable public work is pre-Hispanic, dating to the period of Miraflores (1986). The

prehistoric earthwork was called “La Culebra” (The Serpent) in colonial documents and indeed is probably an effigy mound, as implied by the name. It is made of adobe bricks, runs sinuously for more than 4,100 meters (13,530 feet, or about 2.6 miles), and is probably incomplete. Judging from its location in the local topography, it may be that the earthwork was a boundary or military fortification guarding Kaminal from intrusions from the south. Navarrete and Lujan also consider the possibility that the structure was a pre-Hispanic aqueduct. In any case the structure, in its incomplete condition, still has a volume of nearly 2 million cubic meters (70 million cubic feet). Michels calculates that other public architecture, some of which may date earlier, has a total volume of about 230,000 cubic meters (8 million cubic feet). These constructions would imply many more people in the valley.

Another point to be added is that Kaminaljuyu is much diminished from its original state, many of the largest structures having been demolished with the establishment of the colonial capital in the vicinity about 1776 (Navarrete, pers. comm.). These putative structures, at least some of which would have dated from the Late Formative, would add to the total volume, and, consequently, to the implied population.

Recent research by the Universidad del Valle, directed by Marian Hatch, has detected a major irrigation canal with raised field that dates at least to 300 B.C. and perhaps earlier (Hatch 1997). This canal was associated with a modified lake in midvalley, and the site is arranged around the now dry basin of that lake.

In addition, the elaborate Miraflores-phase burial in Str. E-III-3 implies complex social order (Shook and Kidder 1952). It is an elaborate tomb, with a roof supported by massive timbers, containing the body of a man surrounded by hundreds of pottery vessels and other objects and at least four people sacrificed to accompany him into the other world (fig. 4-8).

With these additional data, Kaminaljuyu becomes a site an order of magnitude greater (about five times larger) than the contemporary centers of Izapa, Abaj Takalik, and even Cerro de las Mesas as far as we know. The implied population and social organization needed to carry out the public works are matched only by the far earlier Gulf Coast centers such as San Lorenzo. It seems likely that Kaminaljuyu controlled tens of thousands of people instead of the suggested few thousand. It also becomes a possibility that the political organization of Late Formative Kaminaljuyu had evolved beyond the level of the chiefdom and had entered the level that we must call a state. We will consider these matters further later in this chapter.

El Portón

The Valley of Salama is located in the north Maya Highlands (Alta Verapaz) of Guatemala. Explorations by R. J. Sharer and D. W. Sedat (1987) show

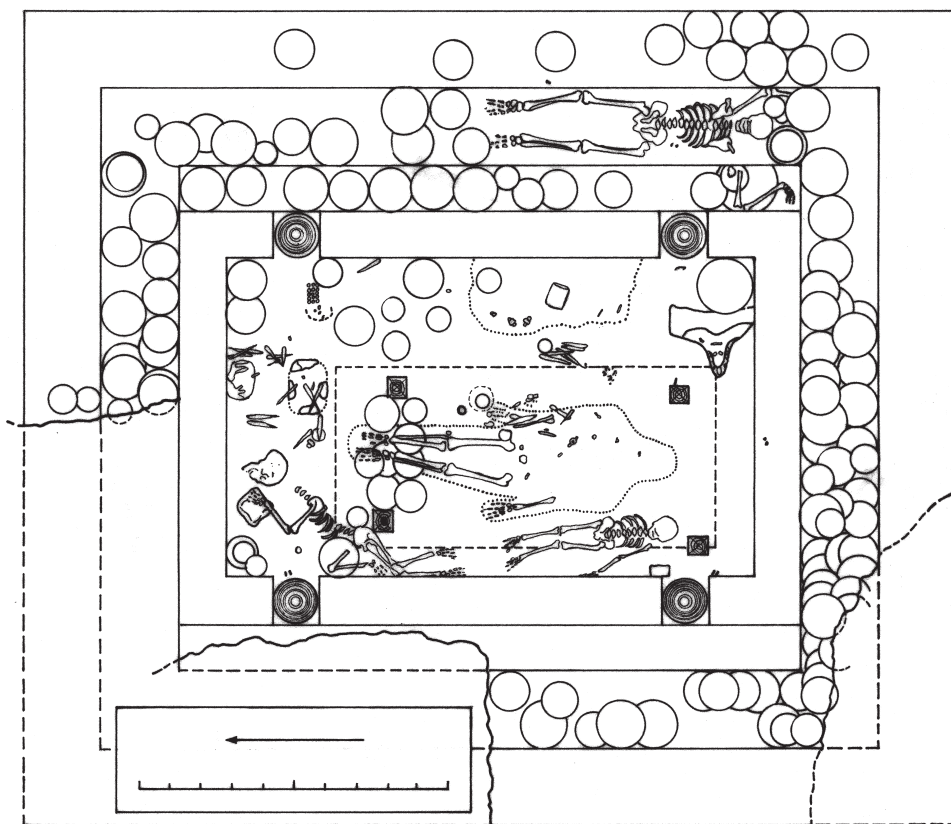


Fig. 4-8. Miraflores-phase (Late Formative) Tomb II at Structure E-III-3, Kaminaljuyu. Note the supplementary skeletons and large numbers of pottery dishes set around the steps of the tomb. Posts formerly held up a timber roof. (After Shook and Kidder 1952, fig. 15)

that between 800 and 500 B.C. a very elaborate burial was made at the site of Las Mangales. This burial was of an adult man who was given jade and shell items in his grave as well as three trophy heads. Most startling were the dismembered remains of at least twelve sacrificed retainers buried around the principal's crypt. By about 500 B.C. another small center dominated the valley.

The site of El Portón is an interesting example of a much smaller center that was apparently tracking Kaminaljuyu in its development. By the Late Formative, the now familiar platform-temple-courtyard complex had appeared there and carved stone monuments were erected (Sharer and Sedat 1973). The best monument at the site is in the style of Kaminaljuyu Late Formative monuments. The political and social relationships of this center to

the lowlands to the north or to Kaminaljuyu are not clear at the moment. It appears to have been a more or less independent, imitative, and provincial center which arose at that time. It was one of many. However, it is also evidence of a geographically intermediate culture between the Kaminaljuyu chiefdom (or kingdom) and the early Maya Lowland states to the north.

Chalchuapa

The southeastern lowland cultures in the Chalchuapa area retained their precocity, and the later Formative remains there are represented by three ceramic complexes. Kal, Chul, and Caynac date from 400 B.C. to A.D. 200. During this period the Trapiche pyramid was rebuilt and extensive new construction around Chalchuapa covered about half a square kilometer (one-fifth of a square mile). Numerous individual mound groups similar to those of contemporary Miraflores-phase Kaminaljuyu were the rule.

Monumental stone sculpture also appeared at the end of the phase. Monument 1 at Trapiche is especially important for its long and complex hieroglyphic text, which shows very advanced features of the later Maya system. All things considered, Chalchuapa is a much smaller regional center than those of Kaminaljuyu or of the next level down, Izapa.

Large quantities of ceramics and debris indicate a growth in population in the Late Formative period. Usulután ware was adopted from its origin zone in western El Salvador and intensively developed, and Chalchuapa may have been a manufacturing center for this important Late Formative trade ware in eastern Mesoamerica (Demarest and Sharer 1982). Tons of Usulután ware are found around the valley.

The eruption of Ilopango Volcano apparently cut short this promising cultural development, and refugee populations may have found their way into the adjacent highlands. Usulután multiple-wavy-lined decorative techniques show up at this time in the lowlands in the very Late Formative complexes.

Chiapa de Corzo

Chiapa de Corzo is one of the most important sites in Mesoamerica because of its nearly continuous sequence, which runs from 1400 B.C. to the present, some 3,300 years. Pottery water bottles, jugs, and storage jars are the main evidence for earliest human occupation of this part of Chiapas. The site is in the lowland trench of the Grijalva River. This finger of tropical lowland environment is the only part of the zone to produce early remains. The nearby highlands lack nearly any sign of early settlements, but small villages apparently lined the Grijalva River bottom, taking advantage of the same features that made the area around San Lorenzo so attractive to the Olmec peoples.

Continuity of culture and population is reflected in the sequence, with a slow series of changes producing the first pyramids and other civic buildings around 550 B.C.—about the same time that they show up in the Maya Lowlands. Public architecture became complex over time, and palaces of cut stone, plastered with heavy coats of polished stucco and roofed by beams and mortar, appeared by 150 B.C. These buildings are clearly suited for residence and are more elaborated than the more common thatched-roof, mud-walled houses that sheltered most of the population. Apparently some persons were important enough to rate superior housing built at community cost.

Social stratification is also reflected in the burials of the period, with Tomb 1 obviously representing a person of extraordinary importance. Tomb 1 is a formally built chamber of unfired brick. A long lance with an obsidian blade was in the grave, along with several unusual pottery vessels and jade jewelry—the latter always a symbol of high status. Also found were three elaborately carved human femurs that had been worked while the bones were fresh. Apparently the bones were originally set with feathers and used as aspergillums (dispensers of sacred liquids). Mythological subjects, such as a crocodile swimming through water, are portrayed on the bones in a style definitely related to that of Izapan and Cerro de las Mesas sculpture. Another bone shows a jaguar-masked person who is very similar to the depiction of a human on Kaminaljuyu Stela 11. To make the case tighter, fragments of Izapa-style sculpture have turned up at Chiapa de Corzo. Indeed, Chiapa Stela 2 may be one of the most anciently dated sculptured monuments known, with a reading of 36 B.C. according to M. D. Coe.

One of the most extraordinary finds in Mesoamerican archaeology was that of the palace structure of Chiapa de Corzo now called Mound 5 (fig. 4-9). When archaeologists dug through the debris of the fallen roof, they found hundreds of smashed and burned pottery vessels of outrageous variety in shape and decoration. Many of these exhibited the hallmarks of the Late Formative in eastern Mesoamerica—mammiform feet; multiple, wavy-lined decoration; and bridged spouts—characteristics that indicate contacts with the zones of Kaminaljuyu and with the Central Valley of Oaxaca. Some pottery from the latter region was actually traded into Chiapa de Corzo. Again, these finds strongly imply that political and economic ties linked these regional centers and provided stimulation one to another in various cultural fields. The palace and the pottery at Mound 5 were deliberately destroyed, indicating that the site of Chiapa de Corzo was abandoned by its former rulers. It was reoccupied shortly afterward, but the styles of pottery indicate new peoples.

About this time, according to linguistic evidence, the group of people known as the Zoque (already encountered as part of the Mixe-Zoque) pushed into the Grijalva Depression. This leaves us with the question of

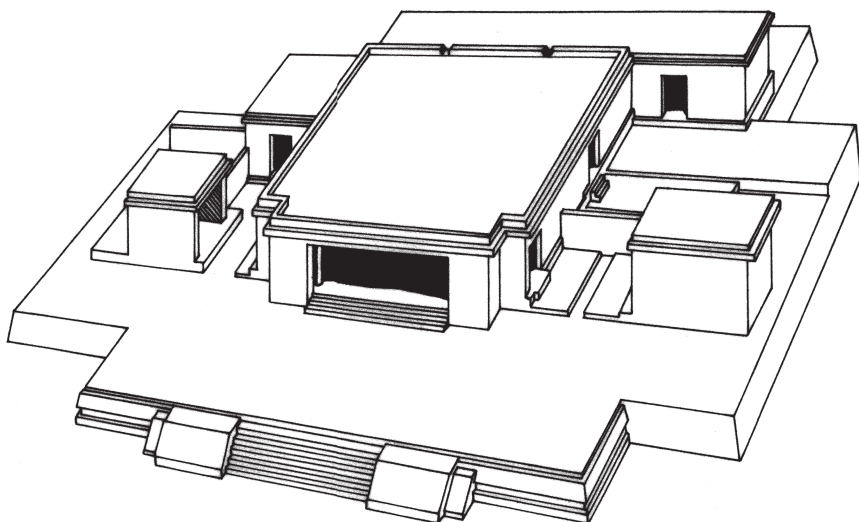


Fig. 4-9. Reconstruction drawing of Horcones-phase (Late Formative) palace at Chiapa de Corzo, Chiapas, Mexico. The structure (Mound 5) was burned at the end of the phase, together with a great deal of ritual pottery of unusual shapes. (After Lowe 1962)

who built Chiapa de Corzo in its Late Formative (Horcones) phase and probably earlier phases. The answer is still speculative, but it seems possible that this is a case of Maya speakers being shoved out of their original positions and displaced into their historical locations. The Zoque are non-Maya. On the other hand, it will be recalled that the highlands adjacent to the Grijalva were very thinly or not at all occupied during most of the Formative. They are also the historical homeland of the Highland Maya. The intrusion of the Zoque or their ancestors and the movement of the Maya into the highlands would account for the sudden appearance of Early Classic remains in that region. The deliberate destruction of the Mound 5 palace at Chiapa de Corzo, in this scheme, would have been the last act of ritual abandonment by the Maya as they left their ancestral center for a new homeland. The Zoque, in turn, seem to have been displaced into remoter zones of the central depression of Chiapas starting about A.D. 500. The Chiapanec were the group occupying the zone of Chiapa de Corzo in the sixteenth century.

The appearance of Izapan-style sculpture at the highland sites of Tonina and Chinkultic may indicate the regions in which the Chiapa de Corzo elite took refuge (Norman 1973). On the other hand, these sites may merely represent further contemporary regional centers like that of El Portón. It

is important that we now have Maya Highland sites with Izapan-style sculpture that are geographically next to the Maya Lowlands. Such adjacency allows for the possible derivation of the first known Maya sculpture from the earlier sculptural traditions discussed here.

The Oaxacan Late Formative

The Central Valley of Oaxaca is a highland area of mountainous beauty. It covers some 3,375 square kilometers (1,303 square miles) and lies at about 1,550 meters (5,115 feet) above sea level. Seven hundred square kilometers (270 square miles) are located in the most desirable valley bottom.

The earliest phases of a long and continuous sequence have already been discussed in regard to the Early Formative. The earliest villages in the Central Valley are located within the valley bottom, in a zone where water is available within 10 feet (3 meters) of the surface. This is exactly the situation chosen by present-day farmers for a type of simple irrigation called pot irrigation. Modern Zapotec farmers of the zone lay out rectangular fields and then dig wells to the shallow water table along the field's edges. They plant their corn and other crops in hills, and, after lowering their pots into the wells, water the nearest plants by pouring a potfull on each hill. They then move to the next well and continue to water the adjacent plants. K. V. Flannery believes that the locations of the earliest villages was determined by the requirements of this irrigation technique (1968). A well dating to about 600 B.C. has been found in this zone and seems to bear out the theory.

It is worth noting that this intensive technique does not depend on large-scale construction or on large masses of people and elaborate social organization. From about 1300 B.C. to 350 B.C., what we seem to have is a series of widely spaced independent villages with their dependent hamlets. San José Mogote by about 500 B.C. served an estimated 1,300 people. Larger communities of this kind possessed a formal leadership and more public architecture, probably associated with marketing and religious activities. A temple building was found in the village along with more evidence of violence and possible warfare.

Ritual structures made of wood, plaster, and thatch, oriented 8 degrees north of east, have been found in San José Mogote and dated to 1400 B.C. These have been interpreted as "Men's Houses" based on ethnographic analogy. Their orientation hints at solar ritual specifically associated with the spring and fall equinoxes, this early form of calendrical ritual leading to the much more complex liturgies of the next period. Human sacrifice and cannibalism may also have been associated with the early rituals (Marcus and Flannery 2004).

Flannery and J. Marcus (2003) note that seventy-five to eighty-five communities existed in the valley at this time, and evidently there was considerable competition. About 600 B.C. San José Mogote's temple was burned, but

it was quickly replaced by a new temple, and carved stone Monument 3 was set into a threshold of the new building. This sculpture depicts a corpse from which the heart has been removed. The style is the same as that later appearing at Monte Alban in its gallery of dead and tortured victims of war. In fact Flannery and Marcus argue that the original settlers of Monte Alban were the population of San José Mogote, which was abandoned at about 450 B.C. It might be observed that the Classical Greek general Thucydides observed in his *Peloponnesian Wars* that he believed there are only three causes for war: fear, interest, and honor. Donald Kagan, a later and distinguished scholar of the subject, has agreed with Thucydides in his examination of wars both small and large.

Ignacio Bernal did an extensive survey of the valley and found that from 300 to 100 B.C. a major population expansion had taken place (1965a). Thirty-nine sites were occupied during this time, including Monte Alban, which was later to become the political center for the entire valley. Many of these sites have civic architecture, and one has a residential area of 80 hectares (198 acres). Expansion into the agriculturally less desirable sloping piedmont zones also shows the effect of population growth, with the change in quantity being followed by one in quality. For the period between 100 B.C. and A.D. 300, only twenty-three sites are known, but these are all larger than earlier sites and have massive ceremonial and civic architecture. Seven of the twenty-three were major centers, but Monte Alban, which is one of them, is not significantly different from the other six, indicating that the valley was probably divided into at least seven petty states at this period. Flannery and his colleagues would see this politically fragmented but culturally convergent process as a confirmation of the Palerm-Wolf theory (Flannery et al. 1967).

Briefly, the Palerm-Wolf theory states that civilization arose in zones where primitive agricultural techniques were easiest and then spread to more difficult zones as more advanced techniques were developed to meet special cultivation needs (Palerm and Wolf 1960). A highland variant of slash-and-burn cultivation (*tlacolol*) is one of the oldest systems. Irrigation systems with long underground channels, dams, feeder ditches, and other features came much later. Primary centers were those that were able to accumulate techniques. That is, primary centers never discarded the older techniques; they kept them in their repertoires and used them to keep special zones in cultivation. Therefore, primary areas tended to be those like the Valley of Oaxaca, which was ecologically diverse and could maintain masses of population by continually developing new subsistence techniques and bringing into cultivation what had formerly been marginal lands. While it is too mechanistic an explanation of the origins of civilized life, this theory does explain certain later features of Mesoamerican prehistory. The spread of Oaxacan Formative communities from the valley bottoms

to the piedmont zones and, still later, into semiarid areas can be explained by the theory. Massed population and economic power gave these areas of Mesoamerica, Oaxaca included, a decisive edge over the supposedly more uniform zones such as that of the Gulf Coast (Olmec). The Valley of Mexico was another such zone of massed demographic and economic power.

The large amount of recent work in the Valley of Oaxaca has produced considerable additional data and theory on the Late and Terminal Formative origins of civilization in that zone. These ideas are better considered in connection with a survey of fully developed Zapotec civilization centered on Monte Alban.

The Central Mexican Formative

Again, in central Mexico we face the picture of a large basin with ecological diversity and, more to the point, cultural diversity very early in the sequence. The chronology chart outlines the sequences of phases. These are largely defined on the basis of pottery but have been correlated with the surveys of W. T. Sanders and his associates (Sanders 1981; Sanders, Parsons, and Santley 1979).

As has been noted, the basin is most favorable for primitive agriculture in its southern sector. Frosts occur less frequently, and rainfall is greater. The first agriculture-based communities occur in this zone as did the previously noted first sedentary hamlets. There was a gradation of population density and social evolution from south to north through the Formative period. Sanders notes that there are no permanent village sites known from the northern basin much before 900 B.C. The southern basin was the scene of most early events and changes. It is possible that the Tlalpan phase from Cuicuilco dates to around 1600 B.C. and that it represents a simple farming hamlet whose inhabitants did hunting and fishing on the side. Pottery made by these people closely resembles that of the early Barra phase in the Isthmus. There is no hint of ceremonial architecture.

As noted in the previous chapter, the first securely dated material from permanent settlements appears from about 1300 B.C., is somehow related to the Olmec, and is found at Tlatilco in the middle valley and at Tlapacoya in the southern part. Garbage from Tlapacoya dating from around 1100 B.C. includes tiny maize cobs. Bones of deer, rabbits, gophers, domestic dogs, and people were all found in contexts suggesting that all were used for food. Mud turtles and water birds were eaten, although fish are mysteriously absent from the earliest phases. The Ayutla and Justo subphases have both these traits and Olmec features, which include white-rimmed black ware, large hollow-doll figurines, and Olmec-like motifs—the already noted shark and crocodile symbols—on pottery.

The sophisticated traits of Olmec-linked culture drop out about 950 B.C., and the villages of the southern valley seem to undergo a cultural

simplification. Even if this is really the case, population growth accelerated from 900 to 100 B.C. Sanders estimates that at 900 B.C. there were only about six thousand people in the valley and that by about 650 B.C. there were twenty thousand. Villages multiplied from about twenty-eight to seventy during the same time, and there are indications that by 600 B.C. the southern lake was solidly edged with communities. Native ceramic traditions slowly evolved, and attractive monochrome brick red, charcoal black, and chocolate brown pottery was made and traded around the zone. Red-and-white and red-and-yellow decorations relieved the single-color themes, as did experimentation with form. Low bowls and large water jars are the most common forms, but long-footed plates began to appear toward the end of the Formative period. Modeling in pottery continued. Jade was used in ear ornaments and other personal jewelry, although this was uncommon, since quite probably, the stone had already assumed its mystical and high-status properties and was restricted to persons of high social rank.

From the early phase of the Formative on into the Aztec and early colonial periods, we have an uninterrupted series of figurine styles. Made by hundreds of people in dozens of communities over at least three thousand years, thousands of the small relics have been collected and sold to generations of tourists and are still to be found. (Many are also made today for the gullible tourist.) Many Formative types have female characteristics and are thought to have been associated with the idea of fertility. Human fertility and that of the earth were intertwined; we know that the Aztec hung strings of these little figures over their fields. Another likely function was their use in curing ceremonies; the figurine represented the person and his or her particular ailment. In most contemporary ethnographic societies, such figures are discarded or become children's playthings after their primary function has been completed. An extraordinary number of these figurine styles blend into and succeed one another in the Basin of Mexico. They reflect not only an artistic and aesthetic continuity, but also a philosophical-religious continuum.

Clay platforms and more formal architecture certainly appeared at Tlatilco by 1300 B.C. At Cuicuilco the first round platforms made out of adobe appear about 400 B.C., soon to be replaced by a larger model made of stone which was about 60,000 cubic meters (over 2 million cubic feet) in volume. These platforms and other public architecture were built in a large town by people using ditch irrigation for subsistence. By 200 B.C. Cuicuilco was large—at least 20 hectares (50 acres) in extent, with about twenty thousand people living in house compounds possibly arranged on a grid pattern. It was the primary community of its time. Tlapacoya built a well-done stone platform for ritual purposes about the same time.

Obviously, these communities were not the only important ones in the valley. However, there was a great deal of difference between these large towns with their politico-religious precincts and the rural hamlets that continued the lifeway of the past. Most of the sophisticated communities were clustered in the southern valley, presumably because of its more favorable environment.

In the northern reaches of the basin, population was always thinner through the Formative period. The Teotihuacan Valley had a few scattered villages that were contemporary with Zacatenco in the south about 1300 B.C., and these were located on the valley floor near the springs and river. In one of these villages, known as Cuanalan, houses from this early period have been found in apparent clusters inside walls. Such household compounds are reported for Aztec times and are in use within the Teotihuacan Valley to this day. Present-day compounds are composed of the houses of a man and his wife and their married children, together with a few shacks for cooking and storage. The compound consists of a dusty, beaten earth floor, and most of the family's daily work is done under the shade of the trees within its wall. Formative hamlets in the northern valley consisted of groups of these family compounds. This extraordinary continuity of lifeway for some 3,500 years demonstrates one reason why archaeologists are interested in traditional communities in the areas in which they work.

While Cuicuilco was building pyramids and performing other wonders, the Teotihuacan Valley finally started to build public architecture. This change, at about 400 B.C., was accompanied by a shift of most communities in the valley up to the tops of small but defensible hills and off the prime farmlands. Many small projectile points are found on these sites. Central to each community is a small pyramid, at least one of which was deliberately destroyed in ancient times. All of these features suggest to Sanders, the discoverer (1965), that during the Late Formative the Valley of Teotihuacan was divided among several warlike communities that headed six small competing states. The motivations of competition were population pressures and the consequent pressures on land. More efficient and competitive social organization may well have developed as a result of this situation of scarce resources and multiplying people.

Cuicuilco was destroyed by a volcanic eruption about 150 B.C., effectively eliminating one of the northern basin's strongest competitors. The lava flow on which the modern University City is built covers the former town. Only the round platforms remain. Unfortunately, a pioneer archaeologist used dynamite to excavate the circular stone structure, and for years it was not certain which came first, lava or pyramid. This was finally clarified by the excavations of Eduardo Noguera in the 1930s.

The Tlaxcala-Puebla Valleys

More than one hundred articles have been published on this area in recent years, based largely on the work of the West German Scientific Mission (Aufdermayer, 1970, 1973; Garcia Cook, 1981). A partial result of this intensive work is a long Formative sequence that begins with agricultural villages dating about 1600 B.C., after which a rapid population buildup evidently took place. During the earliest part of this period, about 1200 B.C., nineteen villages are known. These are thinly scattered over a region of about 2,000 square kilometers (775 square miles). Each village had from ten to twenty-five residences arranged in lines. Houses were also placed on terraces. These small communities used similar pottery, which also resembles that of adjacent regions. By 800 B.C. there were more than 150 settlements, and a few larger communities show signs of public architecture in the form of small platforms and probable altars. A few residences were more elaborate, indicating the appearance of social stratification. Agricultural terracing was carried on from the preceding phase and became more elaborate and widespread. The only indication of any contact with Olmec ideas is the rather dubious association made through a limited number of figurines. All in all, the course of cultural evolution seems to have been quite indigenous, although it is clear that these people were in contact with the Valley of Mexico.

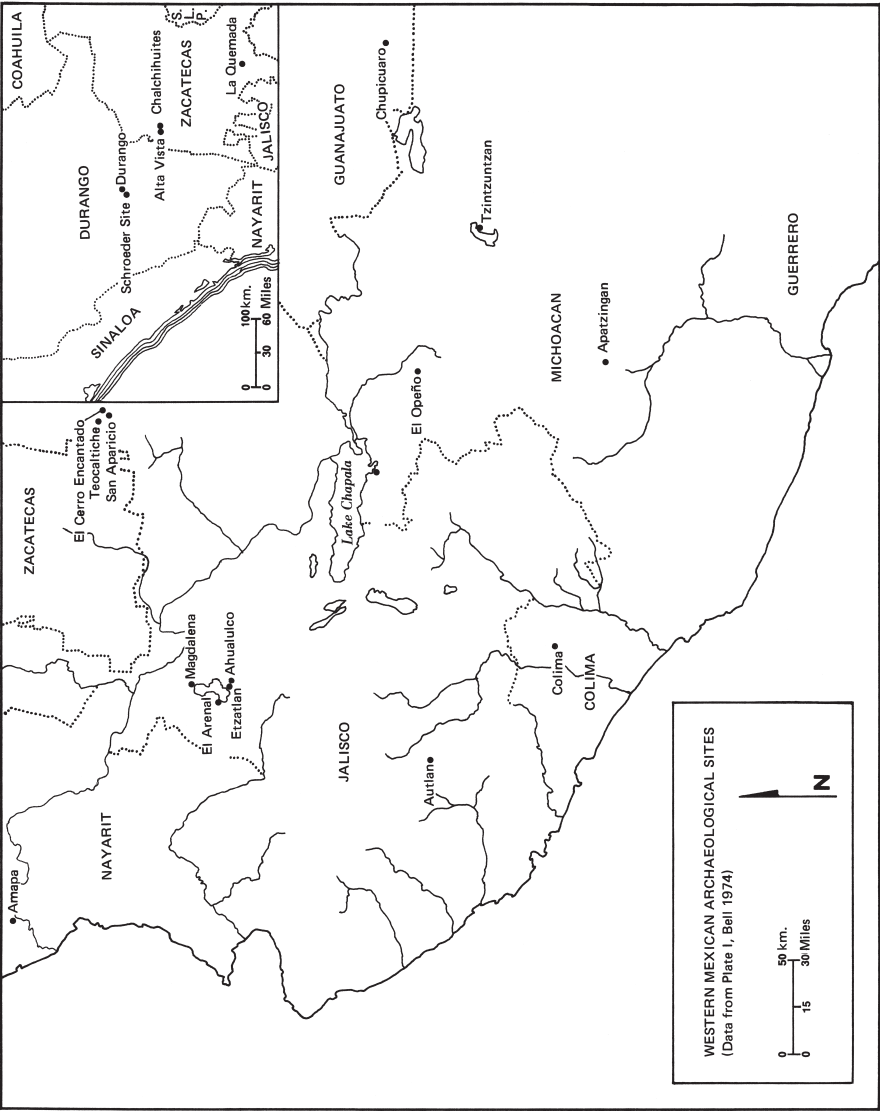
During the Middle Formative (ca. 800–400 B.C.) there were great advances in irrigation with the use of pond reservoirs, dams, canals, and large-scale terracing. The work of Melvin Fowler (1987) at Amalucan is a clear example of this development of ever more intensive farming techniques. At Amalucan the first moves were toward drainage of an area about 700 B.C. These canals were converted to a full-scale and independent irrigation system at the beginning of the Middle Formative and were used until about 200 B.C. The irrigation system was provided with ponds at the upper and lower ends of the network of ditches (Fowler 1987, fig. 8). This intensification of agriculture was probably spurred by further growth of population to a figure double that of the preceding period. The people lived in a diverse set of communities ranging from hamlets to large towns with populations of one hundred to more than two thousand. Some of the towns display the features of enclosed plazas, streets, and drainage systems. Sculpture appeared at sites such as Tlalancaleca, and there are some indications of the use of the 260-day calendar and writing. About three hundred towns, villages, and hamlets were arranged in a hierarchy of importance presumably reflecting an administrative organization. Each political system seems to have been associated with a hydraulic system (Fowler 1987, 66). Fortified sites appear about 400 B.C. It seems clear that the Tlaxcala-Puebla zone was tracking the Basin of Mexico in its general evolutionary trends, although it seems to have a much more rural flavor at this time.

The Late Formative (400 B.C.–A.D. 100) produced a regional florescence as in other parts of Mesoamerica, but less intense than that in the Basin of Mexico to the west. Population reached a maximum at this time, as did the number of settlements, with the appearance of a few true cities. The nature of the hierarchical settlement pattern leads Ángel García Cook (1981) to suggest that the standard political organization was the “city-state,” of which there were perhaps twenty. Cholula built its first pyramid during this period. Impressive efforts increased the control over irrigation water for farming and included dikes in rivers as well as the appearance of raised fields (*chinampas*). Many of the better-known deities of Aztec times appeared and include the gods of death and of the morning star. An interesting development is the increasing ruralization of the region toward the end of the period. This loss of urban features seems to be correlated with the rise of Teotihuacan in the Basin of Mexico. While García Cook feels that a migration of people from the Tlaxcala-Puebla region established the superior social organization of Teotihuacan, another explanation seems more economical. As will be seen in the later prehistory of the basin, Teotihuacan drew in great numbers of people from other towns and cities of the region, effectively depopulating those rival urban centers. It seems likely that this may have happened to the adjacent Tlaxcala-Puebla region as well.

West Mexican Formative Cultures

Western Mexico is a convenient label for an area that was a vast reservoir of ecological, human, and cultural diversity. If any one statement characterizes the area, it is that there is no apparent unifying cultural or natural pattern to it. No area of Mesoamerica is like it; but then, no area of Mesoamerica is like any other. Modern political definition of the area includes the states of Michoacan, Jalisco, Guanajuato, Colima, Nayarit, and Aguascalientes (map 4-1), encompassing about 209,151 square kilometers (80,792 square miles).

According to Robert West (1964), the area's geography is created by two major and related environmental factors: volcanic activity and a peculiar hydrography. Large internal drainage basins cover much of the surface between surrounding volcanic features. Large composite volcanoes, swarms of cinder cones, and many scoria mounds dot the landscape. Some eight hundred cinder cones are to be found between Uruapan and Morelia. The basins are most important for human habitation. A few major rivers pierce the mountainous fence around the plateau and find their ways to the Pacific Ocean. The Rio Balsas on the south and the Rio San Pedro on the north frame the coastal zone, with at least eight other rivers between them, notably the major interior river, the Rio Lerma. Culturally, the presence of so many rivers is important; they provided easy access from the coasts to the interior plateau. There are many lakes in the area; these give their



Map 4-1. Western and Central Mexican Formative sites.

name to districts and are also grouped into the western and eastern lake regions. The earlier material is found in the west, while the late cultures flourished in the east (for example, the Tarascan).

As noted, the first evidence for sedentary communities in the west comes from the shell middens of Puerto Márquez, which have preceramic levels certainly earlier than 3000 B.C. This estuary, seacoast, gathering way of life persisted late on the Pacific Coast, as evidenced by the San Blas phase in Nayarit (ca. 200 B.C.). The earliest sedentary interior material is only about 1500 B.C. Clearly in this area, which is as large as the Maya Lowlands, much more work needs to be done to fill in even the most fundamental data on time-space relationships of the ancient cultures.

Western Varieties of the Formative

Most of the archaeological remains of the West Mexican Formative cultures so far studied are of tombs and burials. Even so, it seems that this area of Mesoamerica emphasized death and death ritual more than other Formative cultures. Family crypts appear about 1500 B.C. and continue until about A.D. 300. These crypts include varieties of chamber tombs. Development of an exuberant and regionally varied tradition of ceramic figures is linked to an emphasis on funeral activities. The socio-political level seems to have been that of linked or independent villages with kinship ties as the major integrating force. It is notable that West Mexico was apparently largely isolated and relatively free of interaction with outside cultures, especially the Olmec. This would reinforce the impression that socio-political organization was somewhat undeveloped in the west. Flannery's argument (1968) that the Olmec tended to deal with societies of equal sophistication might explain the lack of sustained contact. Only in Michoacan and Guanajuato do traces of contact with Tlatilco appear. In any case by 1500 B.C. the West Mexican area had established a distinctive cultural tradition that is only disturbed by outside events beginning about A.D. 350, when the Mesoamerican high cultures began to penetrate the area. It is uncertain whether there were continuities between the Formative tradition and the historic Tarascans who inhabited some of the same area. At the moment it seems best to assume that such continuities were indirect at the most.

Earliest Known Cultural Complexes

Aside from the already discussed Puerto Márquez ceramic complex in Guerrero, there is a somewhat later preceramic phase called Matanchen (Meighan 1972). This is a mollusk-gathering site in Nayarit, as indicated by the usual mound of shells. It should be pointed out that many people died during the Russian Revolution trying to live on mollusks (M. D. Coe, pers. comm.); there is a dietary imbalance in such a regimen. Therefore,

it is entirely likely that the Matanchen represents a periodically or seasonally occupied site at the most. A carbon 14 date of 2000 B.C. was obtained for it.

At approximately 1450 B.C., a ceramic complex known as Capacha appears on the Colima coast, with the pottery found mainly in simple extended burials. Stirrup jars, belted jars (*bules*), *tecomates*, water jars, and composite forms make up the shape inventory. Decoration is by monochrome slipping, zoned punctation, zoned incision, zoned dichrome, and red-on-cream slipping. Similar pottery has been found in Jalisco, Michoacan, and Nayarit, indicating that the western ceramic tradition had begun by this early date, but no close relationships are known outside of the west. On the basis of the stirrup-spout form, Isabel Kelly, the discoverer (1974), suggests that there must be a South American connection and origin to that form. As will be seen, stirrup-spouted jars elsewhere in Mesoamerica date from considerably later. In South America one example has been found in a seacoast culture of Ecuador (Machalilla) that is of about the same date. However, this similarity seems quite a weak reed to lean upon. Machalilla culture itself is probably a seacoast variant of Chorrera culture, as we can see in the evidence presented by the excavators (Meggers and Evans 1962), yet Machalilla is said to be earlier than Chorrera. At present no resolution of this confusion can be made. Therefore, it is specious to defer to a South American priority when basic time-space-content matters are not yet clear for Machalilla. However this is eventually settled, Capacha is the earliest widespread ceramic complex in the west.

In archaeological terms, the El Opeño chamber burials of 1500 B.C. are of about the same date. Work by Eduardo Noguera (1965) and José Arturo Oliveros (1974) has produced good data on the earliest formal tombs known from the west. Nine tombs were found to be dug into a hillside in two lines, all facing west toward the setting sun. All the crypts are similar in construction and are of the simple chamber type, entered by a flight of stairs cut into the volcanic-ash subsoil (*talpetate*). Ovoid chambers are found at the base of the stairs. The tombs contained multiple burials, with as many as ten individuals in one chamber. In Tomb 3 nine skulls were found piled separately from the long bones, which were sorted and stacked—an indication of disturbance and rearrangement. In several tombs there was evidence of repeated entrance and reuse, not only in the piling of bones but also in the layering of burials one above another.

The Opeño ceramic complex is actually a funerary subcomplex, lacking the almost certainly contemporary utility types. Nonetheless, the group is quite diagnostic and is related to Capacha as well as to some late Tlatilco pottery. Late San Pablo ceramics in Morelos are also similar. All of this represents a stronger indication of outside contact than that known for any other early western complex. Ceramic similarities are reinforced by similarities in obsidian point types to some found at Tlatilco. Many of

the considerable number of solid figurines from El Opeño are like those from the Valley of Mexico. On the other hand, some figurines are very regionalized in style and may relate to Chupicuaro types. An Olmec-style motif, the St. Andrews cross, was incised on a greenstone pectoral, and Caribbean seashells confirm wide connections at El Opeño about 1500 B.C. Unfortunately, we do not have a clue as to the nature of the community that used the Opeño area as a cemetery. However, P. C. Weigand (2000) has defined a long cultural tradition located in the west lake district and to its north, which he calls the Teuchitlan. Weigand feels that it began about the same time as El Opeño and that about 1000 B.C. it developed into a pattern of sites with circular or oval mounds containing shaft tombs. These shafts are 3 to 10 meters (10 to 33 feet) deep and have burial chambers off their bases. The chambers contained many flat figurines, and some later burials also have hollow figurines. Most of the burials from 1000 to 300 B.C. were simple interments. Therefore, it seems that we have a few more important families buried in the shaft tombs, while most of population were more simply buried.

Later Varieties of Formative Cultures and Chambered Tombs

The lower Rio Balsas has produced a phase that is approximately Middle Formative, or dating around 800 to 500 B.C. Infiernillo-phase burials were made on beaches and yielded pottery that consists mainly of globular jars decorated by zoned incision, with pendant triangles and opposed triangles as a characteristic motif. One such burial also contained shell bracelets decorated with incised parrots. Small reddish bone carvings of “ducks” were found in the same grave.

The Etzatlán Region and the El Arenal Tomb (300 B.C.–A.D. 250). Until Weigand’s work (1974; 2000), we had practically no information on Late Formative settlement patterns and communities that supported these rich burial manifestations. Let us now turn to that research.

Weigand and his colleagues have examined an area of several hundred square kilometers (several hundred square miles) and have classified 348 sites. Some of these sites are only activity locations: kill spots, hunting stations, and workshops. All of the other sites are grouped into patterns of habitation mounds—semicircles or circles around a central burial mound. The simplest group is that of a single burial mound with a semicircle of house mounds around it (type 4). This is the most common type of site and was probably the sort of small hamlet in which most of the ancient populations lived. Type 4 sites are eight to fourteen times as numerous as type 2 and type 3 sites. The simplest tombs are found in the hamlet sites (type 4), accompanied by one or two pottery figures.

The larger sites (types 2 and 3) have correspondingly more elaborate tombs and burial goods. The famous shaft tomb of El Arenal is in a type 2

site, and in spite of its clandestine excavation in the 1930s, Noguera (1965) recovered a great deal of valuable information about the skeletal and pottery arrangements. Another tomb was found nearby at San Sebastián, and P. T. Furst (1974) salvaged information about it. Some seventeen hollow figures were in a chamber, along with forty polychrome vessels that had probably held food at the time of burial. The pottery figures were of several styles and were grouped around the skeletons of a dozen individuals. Boxes with covers, shell trumpets, and obsidian mirrors were also found in the burial. A carbon 14 date of A.D. 250 was obtained. The figures in the Etzatlán zone tombs and burials are most often of ball players, warriors, and pregnant women. According to Weigand (1974), many of the tombs were originally painted with murals, although these had been poorly preserved.

Weigand thinks that the hierarchically arranged communities were linked through kinship ties, specifically through ranked lineages. Each tomb-figure style may symbolically represent a lineage as well as a community craft specialty.

By the beginning of the Late Formative stage (300 B.C.) a distinctive set of burial customs was operating in the west. The strongest expression of this funerary philosophy is in the shaft-tomb area, which is a geographic arc running from southern Nayarit south through Jalisco and curving west into Colima and to the Pacific Coast. Chamber tombs in this arc consist of deep vertical shafts 3 to 18 meters (10 to 60 feet) deep, with ovoid tombs either directly off the shafts at various levels or connected with the shafts by lateral tunnels. Burial offerings are distinctive and patterned. Large, hollow pottery figures are common and vary stylistically from zone to zone, but there are often mixtures of styles within a single chamber. Elaborate polychrome pottery accompanied the dead, as well as slate-backed pyrite-mosaic mirrors, and conch-shell trumpets.

This complex of offerings is also found in zones where shaft tomb burials do not occur. For example, in the Magdalena Lake district in Jalisco the complex occurs in mound burials, "as it also does in regular burials in the Lake Chapala Basin" (M. Bond, pers. comm. 1976). At Cerro Encantado to the northeast, the complex is found with both simple burials and some chamber tombs something like the earlier El Opeño models. Regardless of the wildly variant styles of tomb figures, a widespread funeral ritual similarity was present in the west beginning around 500 B.C. and lasted a thousand years (to A.D. 500).

Worse hit by pot hunters than most areas of Mesoamerica, all the west has suffered, as shown by the fact that only at the Cerro Encantado and El Arenal sites have archaeologists found undisturbed or semidisturbed burials that show stratigraphic and other associations among the artifacts.

Looting has been fantastic in its proportions. Weigand (1974) estimates that the Etzatlán region alone has yielded eight to ten thousand tomb figures to the antiquity market. Even so, Peter Furst estimates that only 30 percent of the tombs have been found in one badly ravaged area.

Almost endless detailed variation in the styles of the figurines has led to a rough classification of the hollow types. The Chinesca is a grouping of figurines with vaguely Asian features. Apparently it comes from the Nayarit zone. Colima Redware is from Colima, San Sebastian Red and Arenal Brown figures are localized in northern Jalisco, and Horned (Cornudo) figures come from northeastern Jalisco and southern Zacatecas. These categories are based on stylistic similarities and undoubtedly have some basis in reality. How much so, we will be able to judge only when archaeologists find the figures in context and association.

Although less revealing than the Nayarit village scenes, the hollow figures do give a good deal of information about social life and other affairs in the ancient past. Warriors in armor, men and women in everyday dress or undress, women with babies, people sitting, and other scenes give an impression of attempts at portraiture. The famous dog figures bark, snarl, sleep, and seem faithful enough. Perhaps the figures were meant to surround the dead persons in their tombs with a semblance of the actual life with which they had once been surrounded.

There is only one type 1 site in the valley, Ahualulco, which is a combination of types 2, 3, and 4. Ahualulco's mounds and ceramics cover about 1.3 square kilometers (0.5 square mile), with obsidian artifacts found over about 3.9 square kilometers (1.5 square miles). After A.D. 150 or so, in the western lake district, Ahualulco became larger than any other center and politically dominated the whole valley. An early contact with Teotihuacan may have something to do with the integration of the whole valley into Ahualulco's orbit. About A.D. 350 Teotihuacan contact became much more direct, and the great central plateau city dominated this western valley. Ahualulco lost its importance, and shaft-tomb burial began to die out. The prestige of dominant local lineages may have been destroyed by Teotihuacan, and therefore the symbolic and status-reinforcing burial rituals would have dropped into disuse.

Cerro Encantado

Betty Bell (1974b) has excavated an important site in the arid region northeast of Jalisco. As noted before, the shaft-tomb artifactual complex is found at the site, even though the tombs themselves are absent. Bell found an undisturbed burial with a pair of Horned (Cornudo) figures in it. Actually, these figures are typically male-female pairs, with only the males having the mushroom-shaped horns on their heads. An associated carbon 14 date

indicates A.D. 100–250 for this style. Pottery at Cerro Encantado shows relationships to the Chupicuaro culture group to the east and to the Canutillo and Alta Vista phases (A.D. 200 to 500) of Chalchihuites culture to the north.

Nayarit Villagers

The southern highlands of Nayarit were the homeland of an extraordinarily lively set of ceramic models, which reflect everyday life in an amusing and detailed manner (fig. 4-10). No southern Nayarit figurine or model has even been found by an archaeologist in an undisturbed context. E. W. Gifford (1950) thought that these belonged to a period dating from about A.D. 0 to 500 (early Ixtlan). This remarkable anecdotal sculpture has been categorized and analyzed by Hasso von Winning (von Winning 1974; von Winning and Hammer 1972). Most of the scenes fall into the following types: house models showing domestic life; ball games played in courts; and village scenes of infinite variety. War, tragedy, gaiety, life crises, and mundane, quiet domesticity are all depicted. The village models show funeral processions in which catafalques are carried on pallbearers' shoulders through crowds of people. Adults mourn dead children; a small figure lies on the ground within a circle of seated persons who gaze at the child. Volador ceremonies take place on poles erected in the center of a group of houses; a man balances on his stomach on the top of a pole. Dignitaries are carried in elaborate litters by groups of men. Villagers dance and drink in riotous festivals. Family groups engage in quiet conversation outside their houses. Women prepare meals for their families. Women in childbirth are assisted by midwives. Groups of warriors on hills defend their villages against other groups. Figures strapped on beds are suggested by von Winning to be bodies ready for interment. Bloodletting ceremonies involving piercing the cheeks with rods are frequent. Sometimes the rod runs through several persons' cheeks as they stand in a line. In short, we are provided with a rare look at daily life that is as close as the archaeologist gets to doing ethnography.

The pottery models from Nayarit undoubtedly have some regional distinctiveness, but they may generally reflect the quality of life and its major features throughout these late Formative times. Judging from the figures and the village scenes, there was social stratification and specialized leadership, but it stopped short of urban complexities. Villages show elaborately decorated and complex houses, but they are no more so than those of ethnographically known Chiapas villages and ceremonial centers. On the other hand, there is little depicted of civic architecture. Small round platforms in the centers of villages, some ball courts probably with clay walls, and rather low platform foundations for houses are the extent of formal architecture. These features do not reflect access to manpower above the village level, nor does housing show significant differences beyond the ranked

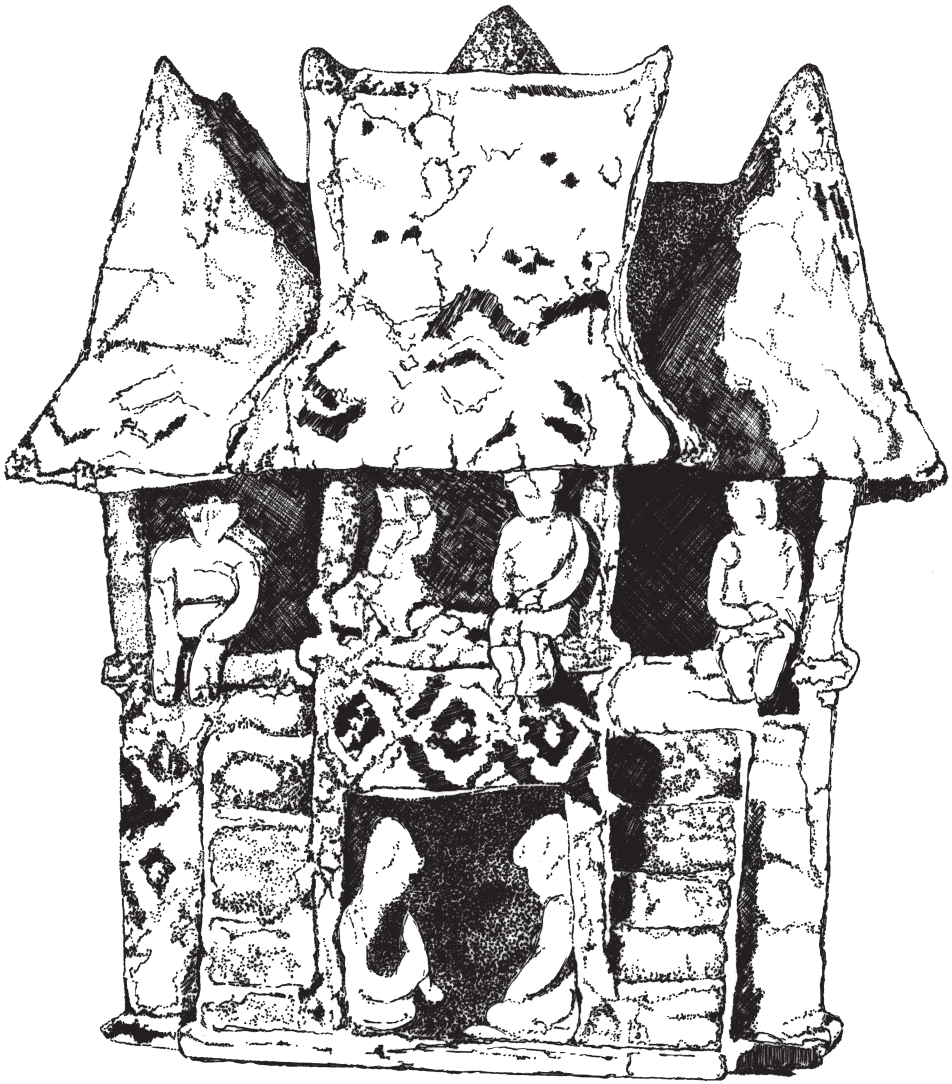


Fig. 4-10. Ceramic model of a domestic scene in a village house, probably from Nayarit. (After Hasso von Winning and Olga Hammer photo)

levels found in most village societies. The models indicate that most men engaged in warfare, but there is no sure evidence of specialist warriors (fig. 4-11). Funerary activities were extremely important, and kinship ties undoubtedly were the main principle of social organization. The great men of the western villages probably were partly so because of their superior lineages. The inferences that can be drawn from these Nayarit scenes are remarkably congruent with the data on Etzatlán settlement patterns.

The Chupicuaro Culture Group

The Chupicuaro site is gone forever under a lake created by a modern dam. During the archaeological salvage project in the 1940s, however, some 390 burials were dug out, many richly furnished with brilliant pottery. Some 46 dog burials accompanied human graves. Muriel Porter Weaver, who made the most extensive report on the site, defined two periods, early and late (1953), but J. A. Bennyhoff and H. W. McBride have suggested that the periods she defines should be reversed; that is, that early is really late and late is really early (Chadwick 1971). Because Weaver (1981) accepts these revisionist arguments, which are based on the Valley of Mexico figurine sequence, we may do so as well. Such figurines are found in the Chupicuaro burials, and thus they can be ordered by a knowledge of the sequence of appearance of figurine types in the valley from whence they originated. The argument concerns the correct sequence (seriation) of figurines. However, rather than confuse things even more, and to avoid absolute bedlam should McBride prove to be mistaken, we will call early Chupicuaro the Chupicuaro Black Ware phase and late Chupicuaro the Chupicuaro Brown Ware phase.

Chupicuaro Brown Ware phase, now considered earlier, dates from about 200 B.C. to A.D. 0, according to McBride. Common to both phases are red, red on buff, painted pattern, and black polychromes. Brown Ware phase is characterized by a heavy reliance on (what else?) brown wares, including brown polychrome, as well as by specific Protoclassic forms in all types. Tetrapod bowls with swollen feet are especially diagnostic. Shoe-shaped pots are a favorite form, as are fruit stands, boxes, and linked cylinders. Many textile-like designs are found on the black polychromes. Again, as at so many sites, we have a cemetery without information about the supporting communities. There is no doubt that Chupicuaro represents an exuberant ceramic tradition in full flower. Chupicuaro-like ceramics are distributed widely over Guanajuato state and into the Tula area (Tepeji del Río) and the Teotihuacán Valley (at Cuánalan).

Chupicuaro Black Ware phase, apparently the later phase, emphasizes black-slipped pottery. Pottery has been simplified, and red-rimmed, red ware, red on buff, and black polychromes are characteristic. In both periods, large hollow figures painted black and red on cream and figures strapped to a



Fig. 4-11. Ceramic model of two Late Formative West Mexican warriors in combat.

bed are found. The intimate connection of the hollow-figure and bed-figurine traditions with the chamber tombs farther west perhaps indicates a commonality of burial ritual and belief.

In both periods, graves were furnished with a wealth of domestic tools and ornaments. Many items of bone possibly useful in textile manufacture were found, as well as a number of musical instruments. The latter consisted of the usual complement of Mesoamerican ocarinas, rattles, rasps, and turtle-shell drums. Clearly, Chupicuaro was an affluent variant of Late Formative Mesoamerica.

The Ortices complex in Colima is mainly known from its great variety of extraordinarily fine red-ware hollow figures. Animal, vegetable, and human effigies are cleverly and deftly done. These figures apparently come from the shaft tombs in the southern end of their distribution arc. The Chanchopa tomb is one example; it also yielded a Thin Orange pot from Teotihuacan II (Miccaotli) with a carbon 14 date of A.D. 10.

Deposition of the Morett midden site on the Colima coast probably began in the Late Formative period. Certain incised types of pottery at Morett resemble Tuxcacuesco ceramics, a type of pottery in Jalisco dominated by red wares. Solid figurines that are included in the complex have similarities to Ortices figurines.

A number of other regional complexes dot the west during this period but are less well defined, and, in any case, pottery is not people. We can only say that the west seems to have been thoroughly settled by peoples with a fairly unified set of beliefs expressed in a variety of funeral customs. Ceramic linkages among the various regions indicate widespread trade and contact, but not on any basis more sophisticated than the village market level. It also appears that no political structure more complicated than a high-chieftdom type of system was developed before A.D. 250.

Maya Beginnings in the Lowlands

Like all of the major areas of Mesoamerica, the Maya Lowlands are ecologically diverse within themselves (Sanders 1973, 1977). Annual rainfall varies from a semiarid 50 centimeters (20 inches) on Yucatan's north coast to an overwhelming 635 centimeters (250 inches) in a small zone of the southwestern lowlands on the Chiapas escarpment. Vegetation varies accordingly, with lower scrub-thorn jungle in the north giving way about 60 kilometers (37 miles) north of the present Guatemalan border to higher tropical forest and finally, along the Pasión and Usumacinta Rivers, to three- and five-canopy forest. Technically, the jungle is monsoon forest, adjusted to an annual cycle of distinct dry and rainy seasons. These seasons fall into a Mesoamerica-wide period of January to May for the dry months and June to December for the rainy months. Water is carried off by the great rivers of the southern lowlands and replenishes the lakes of the central

Peten. The coastal zones of the Gulf and Caribbean consist of flood plains of substantial rivers such as the Belize, up to a line running across the peninsula from Champoton to Chetumal. North of a series of fault lines that run east-west through the central Peten, there is very little ground water either inland or on the coasts. Instead, the rain drains down through the massive unbedded limestone to a water table far out of reach of wells. Small water catchments (*aguadas*) supply a certain amount of water during the dry season, but many dry up as May approaches. In the far northern lowlands, the water table is only twenty feet or less below the surface, and in many cases the subsurface streams have worn away the bedrock, which has dropped through to form large natural wells locally called *cenotes* (sinkholes). Early populations clustered around these sources, and the later Maya developed reservoir techniques to stretch dry-season water supplies.

Communication from one part of the lowlands to another is usually not difficult, only tedious. In the south the main rivers give access to the interior from the Gulf and Caribbean coasts. North of the Central Peten lakes, however, it is generally a matter of walking to get through the vast spaces of central Yucatan. In fact, due to difficulties of portages and rapids, the river passages in the south were only usable to the limits of the coastal plains. During the Classic period matters were improved by the digging of many canals in swamps and the apparent improvement of riverbeds. Crossing the peninsula was such an arduous task in the sixteenth century for the tough long-distance merchants of Mesoamerica that they preferred to go around Yucatan by canoe, but even this means had its limits. For example, north of Campeche City there is a 12-kilometer-wide (7.5-mile-wide) band of mangrove swamp that is very difficult to penetrate. In ancient and colonial times, canals, which can still be seen today on aerial photographs, were cut through the swamps. In earliest times these improvements had not yet been made.

Mineral resources on the peninsula are scarce, but everything necessary to sustain human life is and was present. Salt was collected on the north-western corner of the peninsula, the second largest salt-producing area in modern Mexico. Basalt and the harder varieties of limestone were available in various parts for use as food grinders. The forest, animals, birds, and sea life all provided rich resources on which early farmers with primitive techniques could draw. Only one near necessity was lacking—obsidian, the material from which the machine tool of Mesoamerica, the flake-blade, was made. However, deposits of obsidian in the highlands of Guatemala were accessible to lowland peoples through a trade network. It is well known that obsidian lasts a long time and that relatively little was needed. It is calculated that even from the Coban zone of the northern Guatemalan highlands, under good conditions it would take about two weeks to transport goods to Tikal in the central Peten.

Earliest Known Pioneers

The Early Formative is remarkably weak in the Maya Lowlands. As has been seen, there are indications of very ancient hunters and gatherers and of archaic cultures in northern Belize. Harry Iceland, based on a considerable amount of work done in Northern Belize by himself and by R. S. MacNeish's project, suggests (in press) that there was no real Early Formative in the Maya Lowlands in the same sense as in the rest of Mesoamerica. There were people living in the area around Cobweb Swamp in northern Belize who were using snowshoe-shaped stone tools to cultivate maize and manioc about 3400 B.C. However, they were also hunting large numbers of aquatic animals and deer around the swamp. Corn farming seems to have been minimal until the earliest certain agricultural villages, which date to the Middle Formative, about 1100 B.C. Strong continuities in stone tools suggest that these farmers were cultural descendants of the previous swamp-oriented people.

The Swasey phase of northern Belize and the local Mamom phase at Colha represent the first pottery users and full-time cultivators. Swasey has been defined on the basis of excavations at the small site of Cuello. Carbonized plant remains in the deepest levels have proven to include maize. The corn farmers of Cuello lived in timber frame houses set directly on the ground level. Very soon, however, these early people laid down plaster floors around their houses, probably in order to control the problems of drainage and mud.

The Xe (pronounced "Shay") villages on the Pasión River are nearly of the same age as Cuello but have a somewhat distinctive pottery. Two sites, Altar de Sacrificios and Seibal, have produced pottery and other evidence to indicate that these people are also early agricultural colonists. It is almost certain that there are earlier remains along the coasts of the peninsula that would be in the category of MacNeish's earliest sedentary community. Jack D. Eaton's surveys turned up an amazing number of shell mounds, most of which are Formative in date, but none are as early as the Xe farming villages on the Pasión.

The Xe frontiersmen also built small villages of perishable houses directly on the jungle floor, in contrast to the later Maya, who built their houses on platforms for drainage and better ventilation. This may indicate that these settlers came either from hill country, where there was no need for platforms, or from an area of less rainfall. By this time a full complement of plants was available to the lowland villages, although there is little direct evidence because of poor preservation conditions. Xe pottery is well developed, although it makes use of the *tecomate* and flat pan forms characteristic of most Middle Formative Mesoamerican cultures. The major functions of pottery are as cooking pots, storage vessel for liquids, serving dishes, and transportation vessels. Water jars are invariably slippery and

in present-day pottery-using communities last about a year. Part of the solution to the problem of slipperiness was the use of handles. Another was roughening the surface of the jar to make it easier to grip. Handles were used on Xe pottery, but the later Maya changed to the roughening solution.

Not much pottery that can be called ceremonial was found in the Xe remains—certainly none that indicates ritual and religious life as do the later, informative Maya polychromes. Small, hand-modeled figurines are thought to be curing and fertility ceremony items. Presumably, spiritual life was on the level of curing, shamanism, and divination and was animistic, with little community leadership. Judging by similar nonwestern, traditional communities, every household was responsible for its own spiritual well-being. No ceremonial structures have been found in either Xe or Swasey sites.

Communities were small and isolated. The two Xe villages now known probably numbered less than a hundred people each. Survival in a world of virtually untouched forest and rivers meant meeting tough daily challenges. At that time the *Pasión* was full of tasty fish and turtles but was also full of alligators. The woods contained deer, wild pigs, rodents, and other food animals but also the formidable jaguar and an awesome tribe of snakes.

We have only hints as to the origins of these dauntless groups. A cruciform deposit of jade axes at Seibal is very similar to Olmec deposits. A characteristic Olmec artifact, a jade “letter opener,” was found in this cache. Close similarities between Chiapa de Corzo III (Escalera) pottery and that of Xe also indicate that these pioneers may have come into the lowlands from the Gulf Coast zone. Likewise, there is a similarity to simple pottery of the Kal complex used at this time in the Chalchuapa zone of El Salvador, where ceremonial buildings were already being erected. Possible linkages to the Guatemalan highland site of Sakajut, near Coban, indicate that Xe and highland peoples may have been in contact or related. Certainly, Xe people were in contact with the highlands in some manner, as they were obtaining obsidian. However, it is also possible that lowland people had colonized Sakajut, which is just on the edge of the highlands. Therefore, we are left with the probability that Xe people came from one or the other coast or, less likely, from the highlands, but certainly not as part of a direct colonizing movement. The Swasey material has not helped at all in solving this problem, as it seems vaguely related to Xe and to the succeeding Mamom pottery but shows no similarities to any known outside complexes. These early people had no close links with the great events of the Early Formative such as the Olmec religious movement or their trading ventures. The Maya Lowlands seem to have been a vast untamed wilderness that absorbed a great many people and their efforts before their cultures began to evolve from a backwater status. Based on work in the upper and middle Belize River valley, Joseph Ball and Jennifer Taschek have recently agreed with this long-held view of initial colonists from various origin areas (2003).

Slow Evolution

Slow, uneven population growth occurred from 1000 to 500 B.C. (Middle Formative), resulting in the proliferation of small farming communities all over the peninsula. There are indications that this erratic population growth became an explosion after 550 B.C. The reasons for the apparent jump in numbers of people are obscure. Perhaps larger families became an economic advantage in farming. In any case there was a filling up of the landscape by ever more numerous villages, presumably colonies from the older communities. In these villages very similar red, black, and cream potteries were made and used all over the Maya Lowlands during the Mamom period (550–300 B.C.). At Dzibilchaltun in the north, a long occupation begun about 800 B.C. continued in the small hamlets of the zone. Platform building began about 500 B.C. Loltun Cave, not far away, has a carved figure which is Izapa-like in style. Mani Cenote pottery, once thought to be much earlier, has proven to be Mamom in date. In the Rio Bec zone, around the site of Becan, Mamom remains are the earliest. Villages of this date are especially numerous in the southern lowlands, occurring around Tikal, on the Pasión River, and in the lower Usumacinta area.

A computer simulation has been run for this period using population growth and available arable land as the only factors (Koenig, pers. comm. 1978). The simulation result is a nearly random and even scattering of villages, and the available archaeological samples reflect the same pattern. This indicates that the two factors mentioned were probably the most important in the spread and dispersion of population in the Middle Formative.

A noteworthy feature of many of these sites is the beginning of formal architecture and special buildings dedicated to ritual. The architecture is simple and variable. At Dzibilchaltun, packed earthen walls with stucco floors were tried, later developing into packed stone structures. At Altar de Sacrificios, packed lime and ash floors supported the same simple thatch-and-pole buildings lived in by the preceding Xe farmers. Three of the buildings raised on platforms were grouped around a plaza in what is clearly a ceremonial precinct. The plaza remained a temple zone throughout the remaining fourteen hundred years of the site's occupation. At a small site in British Honduras, greater sophistication in building techniques appears on the Mamom level (W. R. Coe and M. A. Coe 1956). A low, two-stage platform was made of cut stone covered with plaster. Because this is the basic building technique later elaborated in the Classic civilization, it is clear that experimentation with the idea started far back in the Formative stage.

Small, hand-modeled figurines, most representing human females, indicate the continuation of the fertility and curing ideas. The appearance of mushroom-shaped pots may indicate something more. Hallucinogenic mushrooms occur in this zone of Mesoamerica and are still used as aids

to communication with the supernatural in divination, curing, and other ceremonies. Stephen Borhegyi (1963) suggests that these mushroom pots reflect the religious use of hallucinogens in that period.

The population explosion, the appearance of ceremonial buildings, however simple, and the uniformity of far-flung Mamom culture at this time all demand an explanation beyond a simple statement of their existence. They reflect a lifeway centered on small villages of pole-and-thatch houses scattered thickly throughout the forested lowlands. An occasional village had one or more elevated structures with more sophisticated features. These were apparently centers of worship and were likely trade centers as well. The uniformity of pottery and other material culture during this period probably reflects a process of settlement extension based on slash-and-burn agriculture. Later regionalisms of Maya culture grew up partly in response to geographic isolation. It is thought that Mamom, because of its peninsula-wide homogeneity, represents a fairly rapid expansion through space of a population that subsequently had not had time to develop regional distinctions. The use of shifting cultivation in a situation of unlimited land would produce this effect. Since relatively great amounts of land were required for relatively small numbers of people, the population would have to have spread out into previously uninhabited zones as it grew. The Maya transformed their natural environment gradually by cutting down forests, slowly modifying watercourses, and leveling many zones. This process of ecological modification accelerated during the next stage.

An exceptional zone in the near center of the lowlands is a group of large swamps that were shallow lakes about 550 B.C. Richard Hansen's intensive and prolonged work in the region (1980 to present) has produced some surprises. For example, at a lakeside center, Nakbe, the local Maya erected the first major temple structure made from cut stone that was held together with mortar covered with plaster and decorated with modeled stucco masks. There is a possibly contemporary temple about 96 kilometers (60 miles) to the east in the Rio Azul zone, but while the pottery is the same, the dates on this building are not yet confirmed (Valdez 2000, 2003). Therefore, the pattern seems to be one of large-scale formal religious buildings by the Middle Formative, these being located in a few major settlements with dependable water for the annual dry season.

A similar process took place in the great primeval forests of Europe about 5000 B.C., when the earliest Danubian farmers began to spread into western Europe (Piggott 1965). Villages were established at a great rate, abandoned, and reoccupied. Slash-and-burn cultivation was used by these early Danubians, and this extensive form of cultivation led to expansion through space. Transient and shifting communities were characteristic, then, of both the early Maya and the early Europeans, but no connection

is implied. We must note again that there is little or no evidence of significant impact from the startling cultural growth taking place among the Gulf Coast centers.

The Transformation of Maya Culture

A sequence of events occurring over a period of five hundred years transformed Maya culture from a village-centered, more or less egalitarian society to one oriented around formal urban centers containing elite residents who presided over a society of ranked classes.

There is a clear continuity between Mamom pottery and the later waxy red, black, and cream Chicanel monochromes. Again, in the earlier part of the phase (ca. 250 B.C. to ca. 150 A.D.), the context is that of village life, with an astounding uniformity of ceramics over the entire 251,230 square kilometers (97,000 square miles) of the Maya Lowlands. Slightly accelerated population growth seems to have occurred during this earlier period, creating larger communities and filling up the landscape. About the time of Christ, some clearly different things happened. Probably least noticeable to the Maya but ultimately most important, they had drastically modified their landscape and environment by clearing forests, rectifying watercourses, and leveling land. By A.D. 1 the forests were tamed, and farmers and their families were virtually everywhere.

It is estimated that about fifty small trees are required for a standard rural Maya house today (Wauchope 1938). This does not include the great amounts of leaves for thatch that are gathered from one species of palm. As noted by R. Matheny and his associates (1983), a thousand houses, enough to house about five thousand people, would require about fifty thousand small trees. Population was dense enough to force some people in some zones such as northern Belize to use swamp drainage and reclamation techniques as well as hillside terracing. Colha, in northern Belize, became a producer of thousands of high-quality, standardized stone tools, which were used in wetland cultivation in nearby Pulltrouser Swamp.

Meanwhile, many centers were erecting much more elaborate architecture. Yaxuna, in far northern Yucatan, has a pyramid dating from this phase that is over 18 meters (60 feet) high and measures about 61 by 128 meters (200 by 420 feet) at the base. Cut-stone masonry was used to build this platform, which undoubtedly supported a temple, as did the identical later pyramids. To the west of Yaxuna, at Dzibilchaltun, the use of cut-stone masonry was well established, although the buildings were much smaller. The largest Middle and Late Formative center in northwestern Yucatan was Komchen, which covered about 2 square kilometers (.8 square miles) by 150 A.D., with perhaps three thousand people living around a center formed by five large platforms with their presumed buildings atop them (Ringle and Andrews 1982). Concentric zoning, a causeway, and other

features set Komchen apart as a regional variant of early Maya civilization. Looting has badly damaged this important site, but it is apparent that it subsisted on more than its own agriculture and may have controlled the nearby salt fields and been tied into a trade network that was based on canoe traffic around the peninsula.

The site of Edzna is even more impressive in the efforts expended by its large populations during this period. A huge canal system more than 12 kilometers (7.5 miles) long was built as a combination reservoir and irrigation source. Irrigated fields, similar to European “water meadows,” were created along the canal, and extensions of the canal to the north were made to bring more land into intensive cultivation (Matheny et al. 1983). A fortress, built into the canal system, was connected with public architecture in the main center by a raised causeway. The immensity of this system of public works can be judged by the fact that the canal system taps water drainage from an area of 220 square kilometers (85 square miles) and has a capacity of at least 220 million cubic meters (7.8 billion cubic feet) of water. The population and social organization needed to build, maintain, and operate such a system were substantial.

On the Gulf Coast near the Laguna de Términos, recent research by W. J. Folan and his colleagues (2004) has shown considerable early sophistication in a site formerly thought to be exclusively Late Postclassic—Champoton (Chakan Putun). Located near the coast of the Gulf and the Champoton River in a favorable spot for trade and transfer of goods and commodities, this center was gradually transformed into a city and port by 400 B.C. A major structure, Structure 1 in Group 1, was built during the Late Formative using megalithic-sized stones in the base courses (fig. 4-12). A major dry period in the region, beginning about 250 B.C., apparently put Champoton out of business for a very long time, and the center only revived in the Late Classic, about A.D. 700. We shall return to this interesting site.

In the interior, the region of El Mirador (2,158 square kilometers [832 miles]) and the considerable work there has changed a great many of our ideas about the nature of the Maya Late Formative and its transformation. The work of Hansen (1990) and of R. Matheny, A. A. Demarest, and R. J. Sharer (Matheny 1980) all indicates that by A.D. 1, and perhaps 150 years earlier, El Mirador was an immense center, calling on thousands of people and controlled by an elite that could plan the construction of an incredibly large and complex system. El Mirador consists of several groups of very large buildings, at least two of which are placed on immense basal platforms. The Danta Group terraces and temples alone contain about 2 million cubic meters (1,308,000 cubic yards) of material. Furthermore, the group is surrounded by an impressive embankment 1,300 meters (nearly a mile) long, 20 meters (66 feet) wide, and 6 meters (20 feet) high. This was capped off by high superstructures decorated by large stucco masks of jaguars in

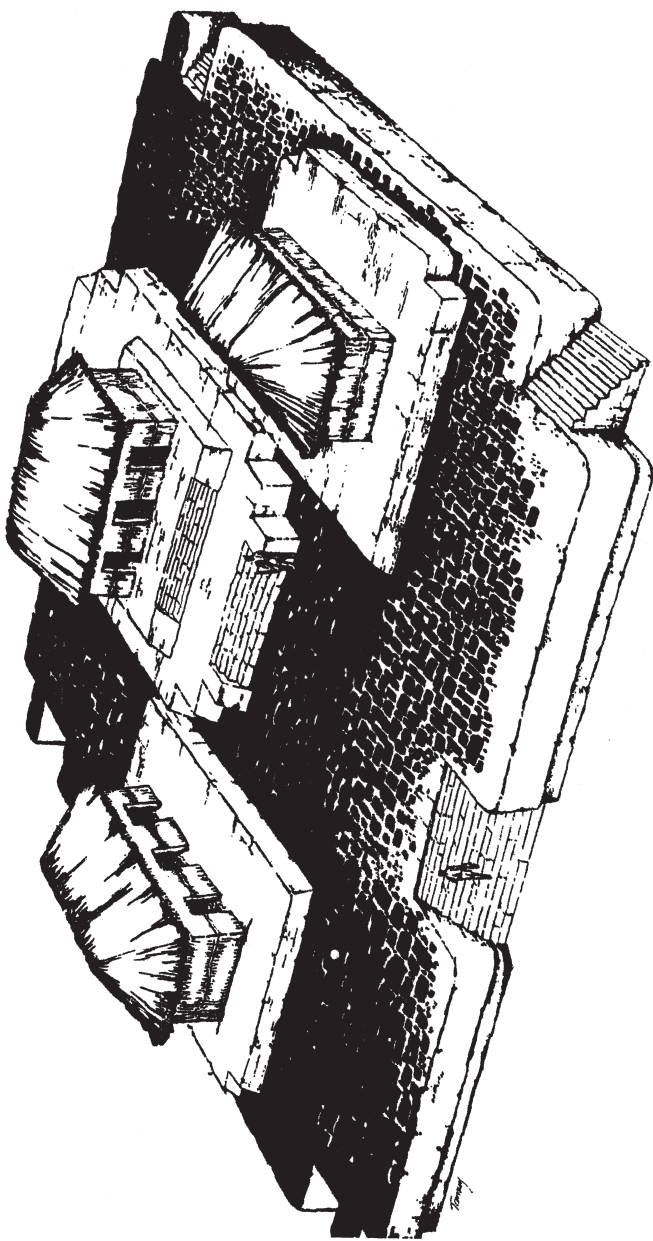


Fig. 4-12. Reconstruction drawing of Late Formative Triad Temple at Champoton, Campeche, Mexico. (Drawing by Ernesto Tamay Segovia, courtesy William J. Folan)

various parts and guises. This is not the only large group of temples at Mirador. It is connected to other centers by a radiating set of causeways that reach out as far as 23 kilometers (14 miles). At the end of the Formative, El Mirador lost its grip and became a secondary center, with no significant public construction thereafter. We will consider this abrupt decline in El Mirador's fortunes when discussing the nature of Maya civilization and its political organization.

At Becan in the central zone (Rio Bec region), a large platform 14 meters (45 feet) high was built, and smaller buildings with masonry and stucco platforms and walls topped with thatched roofs were erected. Sometime during the Late Formative, a fortification was built around this and other formal buildings. The defensive system consisted of a dry moat, with earthen ramparts on the inside. More than 126,000 cubic meters (164,800 cubic yards) of materials were moved in building these fortifications. Further south at Uaxactun, one of the most elaborate Late Formative structures was built: E-VII-sub, a pyramid decorated with the modeled stucco heads of serpents and jaguars. Twelve miles to the south, Tikal was burying its important dead in formal masonry chambers within platforms. In one of these burials the dead dignitary was furnished with a jade mask with inlaid shell teeth. Red and black monochrome pottery in the burial is distinctive only in form from the general run of Chicanel ceramics. An early temple in Tikal's north acropolis was painted with a procession of human figures dressed in feathers and costumes. The figures are bent around the outside corners of the structure, apparently to give them more dimension. The style of these figures is reminiscent of Izapan art although probably not derived from it. Fragments of carved stone indicate that the Late Formative inhabitants of Tikal were experimenting with sculpture. Tikal also fortified itself with about 40 kilometers (25 miles) of dry moats and ramparts on both the north and south perimeters of the city. There is no doubt that there was something worth protecting and someone to protect it against.

Ninety miles to the south, on the Pasión River, the Altar de Sacrificios center possessed three temples and possible residential structures grouped around a plaza. Also at that center, an attempt was made at erecting a tomb for a distinguished person. As in the Tikal tomb, the tomb pottery is only distinctive from the other red, black, and cream pottery by its excellence in finish and form. Small incense burners and the continued use of mushroom pots give us some indication of ritual. David M. Pendergast's (1981) long-term work at the Belize site of Lamanai has produced evidence of huge structures, decorated with modeled stucco, built during the Late Formative. The center is very large for its time. The not-far-distant site of Cerros is an interesting example of a Maya port complete with canoe basin and jetty. It is also associated with raised fields (Scarborough 1983). The pyramidal structures inside its boundary canal are decorated with symbols

of the sun god (R. A. Robertson and Freidel 1986). David Freidel and Linda Schele (1988) have interpreted the iconography as reflecting the identification of Maya rulers with the jaguar and the sun. The jaguar was thought to be the form taken by the sun when it descended into the underworld at nightfall.

Direct evidence of more elaborate buildings and some ritual paraphernalia indicates a more formalized religion. However, these materials were only the stage on which the actual liturgies took place, and we have little evidence of the latter. We have even fewer ideas about the philosophical concepts that underlay the religious practices, although we can draw analogies. Presumably life crises, political community matters, nervous farmers, and a desire to foresee the future determined many of the functions of early Maya religion. These functions are near-universals in human religions. Curing ceremonies and rites to aid in life crises are especially emphasized in village-oriented societies. The more highly organized the society, the more functions are taken on by religion and the more need exists for specialists. Possibly the dignitaries buried in the early tombs gave not only community direction but also religious leadership. Certainly the early tombs reflect increasingly stratified society and, at least at Tikal, the concentration of some wealth in the hands of a small part of society.

During this same period, Maya writing and the mathematical system were developed and applied to problems of time and astronomy to produce a formal set of calendars. The writing system is closely related to formal art, and there is a good deal of interchange in symbolism between the expressions of intellect and aesthetics. An increasing number of finds now indicate the nature of writing in this early period. An incised glyph on a Chicanel vessel was found at Colha (D. Potter, pers. comm. 1982). Nearby and smaller Kichpanha produced a whole text that Peter Mathews interprets as including a personal name (Gibson, Shaw, and Finamore 1986). These first signs of writing seem to be ownership statements as much as anything, but they may be misleading because there are so few of them.

The last one hundred years of the Formative seem to have been the initial florescence of Maya civilization. This period, not yet given an agreed-upon name, dates from about 150–250 A.D., and in it one can see most of the features of the Early and Late Classic periods of the lowlands.

The Izapa-related art at various points and other indications of outside contact hint at some stimulation from widespread Mesoamerican phenomena. However, as nearly as we can determine, the Late Formative Maya world was still largely isolated for most of its inhabitants, penetrated only occasionally by ideas diffused from elsewhere. The rest of their cultural apparatus was evidently developed on their own.

After A.D. 150 it is clear that there were both ceremonial centers with little permanent population in them as well as true cities. In some of these,

perhaps in all of them, the earliest polychrome painted pottery appeared as a status item for the elite groups. The painted symbols evidently are those of family or larger kin groups, serving to set apart the elite families from the rest of society, which continued to use the older types of monochrome pottery for another century or so. Formative pottery traditions continued largely undisturbed throughout the Maya Lowlands, and the monochrome reds of this period clearly gave rise to the later red pottery of the Classic.

It was once considered possible that Central American elites had intruded into the Maya Lowlands and assumed the leadership roles of Maya society. Indeed, Payson Sheets (1971) has found irrefutable evidence of a violent eruption of at least one volcano in El Salvador. He suggests that the dense blankets of ash laid down about 100 B.C. drove farming populations out of the Chalchuapa zone and possibly into the Maya Lowlands. It now appears more likely that they went into the ecologically and culturally similar highlands of Guatemala. Another eruption about A.D. 250 devastated the zone and the commerce that it had sustained (Sharer 2000, 480).

Further to the north, slate wares and architectural styles peculiar to the northern peninsula were developed. At Dzibilchaltun, we seem to have roughly parallel developments in the full emergence of ceremonial centers and directing elites.

By the beginning of the Classic period (ca. A.D. 250–550), we can define at least five regionalized variants of Maya culture. The northern and central Yucatecan are the most indigenous and least affected by outside influence, except perhaps by example. The flowering of the central Peten zone is clearly derived from regional Late Formative cultures but is distinct in pottery, architecture, and social organization. The centers in the Pasión River zone form a variant different perhaps because of the distinct origins of the population from the Gulf Coast. In northern Belize there is a rather cosmopolitan set of centers that were linked with the north by the canoe trade.

Explanations of the Rise of Maya Civilization

It is easier for us to understand the ultimate collapse of Maya civilization than its rise. We have seen and have had recorded for us the catastrophes and disasters that can overtake human communities, but no records or eyewitness accounts are available on the circumstances leading to the rise of any of the world's great preindustrial civilizations. Writing as a necessity and as cultural elaboration is itself a feature of civilized life. History is a still later feature. Even in its earliest forms, writing did not record historical fact as we know it. Linear B of Bronze Age Greece and Crete was used for the accounts of royal households. The earliest Chinese writing records the results of arcane divination important to the elite at the court city of Anyang. In any case, it is unlikely that persons participating in these pristine civilizations

understood the evolution and quantum jumps leading to new orders of society and culture. This is not to say that they did not explain matters, but their later explanations were more in the nature of myth, cosmology, and legend, and there is no reason to believe that earlier explanations were more empirical. No doubt the members of early civilizations had the same confidence in the explanatory power of their theories as we have in our own. However, we do follow the cult of the scientific, which gives us (perhaps unwarranted) confidence that we may be approximating the truth. Be that as it may, the following account combines the best understanding at present of the surge of Maya culture from a village-centered, rural society to the splendor of an exotic tropical civilization.

No single event or theory accounts for the transformation. Faulty as it may be, the evidence indicates that no simple-minded theory of derivation from another culture is the answer. It is equally simple-minded and inadequate to think strictly in terms of in-place evolution, a kind of bootstrap operation on a giant scale.

It has been suggested by W. L. Rathje (1971) and M. C. Webb (1973) that trade in various guises was a stimulus to the rise of the Maya elite because of the need for managers. Indeed, this seems to be the case in the ancient Middle East (Wright and Johnson 1975). Rathje suggests that in the southern lowlands the need for salt, obsidian, basalt, and other materials not found there led the Maya to elaborate social organization in order to assure themselves of these materials through trade. It does also seem that the northern center of Komchen may have grown to its large size by reason of the salt trade. Cerros, on the Caribbean, is clearly a port. However, the quantities of these materials needed are relatively small, and salt is always available through various expedients such as boiling salt-yielding plants. The biggest objection to the trade model is that large and precocious centers such as Tikal do not evidence much early importation of obsidian. Trade does explain the elaboration of various aspects of Maya culture, but after that the culture achieves momentum. There are similar problems with other single-factor theories.

The following explanation offered is derived from the model for the rise of Maya civilization developed by a conference of a group of scholars (R. E. W. Adams 1977a) and has been modified with data and theories developed later. First, it should be said that the transformation seems to be one of several stages, not a single dazzling event. The initiating factor leading to complexity is probably population growth. Studies have shown that when populations reach certain densities, they disperse. This appears to have happened during Mamom and especially Chicanel. Further population growth will generally lead to structural changes, usually the introduction of a hierarchical principle of organization. This simply means that there will be increasing levels of importance in various parts of the culture, such as

economics. In this case markets in some communities will become larger and handle more variety and volume of goods than smaller towns or villages with their smaller markets or exchanges. In politics it means that for efficient administration, administrative levels will be developed with increasing centralization of power at the top. The forms that these markets and political arrangements may take will vary according to the civilization, its needs, and the ideological foundation of that culture. Thus, the ancient Middle Easterners in Sumeria, lacking nearly everything, developed markets and trade networks to handle large volumes of materials. Patron deities were protective of entire cities and their populations. The ancient Maya, lacking very little of an indispensable nature, emphasized trade in high-value, low-bulk commodities, most of which seem to have flowed through the hands of a few people at the top. The Maya religious system emphasized ancestor worship and the divine nature of their leaders, who had distinguished genealogies. Therefore, trade was often used by the Maya to legitimize and reinforce status.

At this point of population growth in the case of the Maya, then, ideology seems to have become the overriding factor in further development of civilized institutions. The Maya elite, deriving their status from having been heads of distinguished lineages or clans, reinforced that status with items of widespread value in Mesoamerica. Trade for jade, obsidian, cacao, and other objects became important. Because of the emphasis on ancestor worship, funerary monuments to important members of the elite were a logical development for the Maya. Large “temple” structures were constructed and embellished through the efforts of the community. Community efforts were also organized to more immediate effect: the drainage of swamps for increased food production, the building of jetties at ports, the building of fortifications for protection.

Once an elite had emerged, it seems that there was competition between various leadership groups. Ultimately, this competition led to warfare. There are probably six major fortresses in the Maya Lowlands dating to the Late Formative; one of them is Tikal and another is Becan. The function of any fortress is to protect a group of fighting men, and it may be to protect an elite as well as a large segment of the general population. The Edzna fortress is relatively small, the Becan fortress of about the same size, but the Tikal fortifications seem to be an effort to protect a substantial amount of the total population. Warfare, therefore, probably became an accelerating factor in pushing backward Maya centers along the path to increased complexity in social organization.

An additional factor that probably became more important as populations grew in certain drought-prone zones of the Maya Lowland was the need to improve and create reservoirs for survival through the annual dry seasons. Robert Carneiro (1970) has developed a theory of the origin of the state that revolves around the growth of population and the intense use

of scarce resources. He argues that as population grows, certain resources such as prime farmland and water assume an overwhelming importance and must be managed and enlarged. In addition he argues that instead of seeking new lands or resources outside the ecological niche already developed, people tend to intensify their use of the resources within their original ecological zone. For the Maya this “resource circumscription” centered around water. Even in the southern lowlands there are zones with dry-season water problems. Therefore, the people of those regions would modify and build reservoirs that would become the foci for still more people. This situation, in turn, would lead to the concentration of power in the hands of those leaders who could command the manpower to construct and maintain the reservoirs. Immense political power and social control would fall to those able to control the water supplies. It is noteworthy that the major political and religious centers of later times are located near reliable natural or artificially created water supplies. The Late Formative fortress-hydraulic system at Edzna was noted above. Vernon Scarborough (2003) has originated, developed, and researched many of these and other aspects of water management in ancient and modern cultures.

Thus we see that Maya civilization arose partly from population growth and the consequent need for more social organization, leading to a hereditary elite who based their status on genealogy. These elite groups tried to reinforce their exalted status by various symbolic means such as distinctive pottery, costume, and jewelry. They also secured their tools of social control by public works such as monuments to their ancestors and practical improvements such as enlarged water supplies. Their roles enlarged as directors of trade, administrators, managers, and soldiers. The relatively sudden nature of the transition, during the last century of the Late Formative, is explained by the inherent instability of a transition period. That is, change in a few parts of culture unbalanced various social institutions and created a need for new developments in nearly all. Pressures from warfare and other forms of competition acted as accelerators. Once the process had begun, it was irreversible and led to complex cultural systems that could degrade, collapse, and be reformulated but could never return to the simplicity of form that had characterized the Maya at the beginning of the Late Formative.

Summary

At the end of this lengthy review of the Late Formative, a few final words need to be said about the general trends and evolutionary events of the period. In an overall perspective it appears that the following institutions appeared in nearly all regions of Mesoamerica before A.D. 250, and in the following order: regional economic centers, elite classes, administrative centers, true urban centers, and, finally, some form of state structure. As a still more

reductionist premise, it might be said that this was the period of the application of the organizational principle of hierarchy to nearly all parts of cultural life.

Because nearly every author has his preference as to what constitutes a city or a state, these should be defined before we go further. The view of a city taken by Julian Steward (1961) was that it heads a hierarchy of settlements and performs unique functions for a regional society and for its time. Most of the famous ten criteria of urbanism of V. Gordon Childe (1950) can be applied to most Mesoamerican regional centers after about A.D. 150. These criteria include relatively higher density of population than the surrounding countryside; a stratified society; nonfarming occupational specializations; formalized religions; markets; a bureaucracy or civil service supported by a social surplus; and, finally, writing or accounting systems. However, the regional centers clearly preceded city life, as has been seen.

States are political systems with hierarchical organization presided over by a professional ruling class (elite), as Flannery and his colleagues observe (1981). These rulers are administrators of diverse functions, with propaganda and communication devices (art and writing). States require secure economic bases, although the mix of productive activities may vary. The professional rulers dispose of surpluses of labor and other resources to build public works of various kinds. A state has a monopoly on force, which means that soldiers and police are nearly always present and fortifications are often present as well. Finally, we might observe that strong centralization is not always present.

The characteristics given above deal with two aspects of culture only: a special type of community and a particular type of political structure. This, of course, is not the totality of culture by any means. All cultures have kinship systems, religious and ideological institutions, technology in the broadest sense, social organization, associations or sodalities, and other patterned features. Civilization is not the appearance of city life or state organization alone, but the totality of complex, hierarchically organized institutions. However, because this matrix of complex cultural institutions is required to create and sustain cities and states, the latter have often been used by archaeologists as a kind of "tracer element" in determining the moment and location of civilization's appearance.

Turning back to our record, it appears that regional centers first appeared in the Early Formative in order to serve certain economic needs, perhaps for regional markets, as well as social needs. The latter might have been only slightly more complex than the macroband activities of the preceding stage. The social context is that of egalitarian societies. The appearance of elites came about variously, based on regional needs. In the case of Izapa, it appears that the elite were truly theocrats who mainly served

the philosophical and religious needs of the region. In the case of the much larger and somewhat later center of Kaminaljuyu, there is an emphasis on ranked kinship-group leaders giving way to hereditary leaders, who had parlayed their special positions into permanently higher status.

These Late Formative cultures of eastern Mesoamerica appear not to be highly centralized. In contrast, the situation of the Basin of Mexico is one that appears to lead to centralization of communities and political systems as well. Thus planned towns (and probably cities) appear early in this zone and apparently point to the further development of despotic leadership, which seems so characteristic of later Central Mexican civilization.

Thus, in a number of Mesoamerican regions, such as Izapa or Cuicuilco, the elite, or those who aspired to be elite, learned the proper regional combination of factors that led to higher status. At Izapa it was calendrical ritual, lunar worship, and concern with productivity. At Kaminaljuyu it was an emphasis on kin-group leadership, with ancestor worship becoming a manifestation of it. The Lowland Maya appear to have combined the religious and despotic models in the milieu of their own particular environment. An elite control of all aspects of life appears to have been emerging in the Basin of Mexico. Oaxaca seems to have been developing along a variation of the centralized model, with the additional spur of warfare to accelerate the process. All of these regions either verged on or developed archaic states and cities. Some zones either were behind in this game or simply seem not to have aspired to things beyond the village level. West Mexico is an example of this conservative, rural, and possibly more satisfactory way of life.

More technically, Marcus and Adams (in press) summarize some of the trends of the Formative as including the appearance of the first pottery and permanent villages; the emergence of social rank; interregional trade in status materials among the new elites; as well as competition among those select groups. Military conflicts often resulted from such competition, and these are indicated by burned buildings, mass burials, and fortifications of all kinds. To these trends should be added the constant of population growth, together with the consequent colonization of vacant zones such as the Maya Lowlands. Intensified agriculture and water management were often involved. Marcus and Adams also list hierarchies in society and among communities as well as in the rise of the first states. However, in a few cases the cycling back and forth between simple and complex chiefdoms that had characterized the Early Formative continued to be the major political dynamic.

CHAPTER 5

CLASSIC MAYA LOWLAND CIVILIZATION

Then they adhered to the [dictates of] their reason. There was no sin; in the holy faith their lives [were passed]. There was then no sickness; they had then no aching bones; they had then no high fever. . . . At that time the course of humanity was orderly.

Chilam Balam of Chumayel 1967, 83

[Herewith] the history which I have written of how the mounds came to be constructed by the heathen. During three score and fifteen katuns [1,500 years] they were constructed. The great . . . men made them . . . the great mounds came to be built by the lineages.

Chilam Balam of Chumayel 1967, 79

Among these high hills which we passed there are a variety of ancient buildings among which I recognized habitations inside, and although they were very high and my strength very little, I climbed them, although with difficulty. These were in the form of a convent with small cloisters, and many living rooms all roofed, with terraces [outside] and whitened with lime inside.

Father Avendaño in Morley 1937–38, 55

MAYA CIVILIZATION WAS not created full-blown in a green flash of Olmec lightning. As seen in the previous chapter, it is regarded as the result of a number of factors that interacted—a less spectacular but more interesting process. Resource concentration, as suggested by R. Carneiro (1970), population growth, the demonstrated fact of cultural variability among the farming villages, a development of a powerful set of ideologies, the donation of new ideas and techniques from outside the Maya area, and the food resources available to the Maya all affected the forms of Maya high culture from about 200 B.C. to A.D. 850. Like most of the cultural superstructure in Mesoamerica, Maya classic civilization was an elite-class phenomenon. Within its broad patterns, there were plenty of variations. This diversity also operated through time, and, as will be seen, Maya culture

underwent serious and drastic changes as a result of several crises in its history. In the background of all of this historical action, however, are commonalities and continuities connected with the everyday matters of getting enough to eat and drink and of providing shelter. Therefore, the farming and food-gathering patterns of the Maya claim our attention first.

Agricultural Patterns

It was once assumed that the prehistoric Maya practiced agriculture in much the same ways used by their descendants in the sixteenth century and even today. Thus it was thought that the Maya practiced a form of shifting cultivation (*milpa* agriculture), were only able to sustain thin populations, lacked true urban centers, and probably had not developed true, centralized states. This assumption led to serious misunderstandings about the agricultural potential of the Maya Lowlands and the possibilities of urban life and, above all, it misled scholars as to the numbers of people involved in ancient Maya societies. It also meant that the Maya could be characterized as a peaceful, noncompetitive, theocratic society, led by philosopher-priests and guided by humane, pacific values. It was truly what Norman Hammond (1974) has called "the myth of the *milpa*."

Intensive research, beginning about 1968, has led to a drastic revision of these ideas. To put it briefly, it is now known that the Maya probably practiced shifting or swidden cultivation during the pioneer stages of their cultural development (Early and Middle Formative) but that during the Late Formative population growth had gradually forced them to more intensive forms of food production. Further, they lived in a large number of true cities, numbered in the hundreds of thousands during the Classic, and were led by political-religious kings who practiced warfare against their neighbors, often on a large scale. This view of the Maya may make them less attractive than they were formerly, but it does make them a great deal more understandable.

The following is a review of Maya agricultural history as it is known at present. It appears likely that the initial agriculturalists, whether colonists from elsewhere or indigenous converts, practiced a form of cultivation that can be called localized intensive agriculture. It has been well defined by Andrew Sherratt (1980), who has suggested that it was nearly universally the first type of plant cultivation. This kind of gardening took place around the zones of best soil moisture, which are found around springs, along river and stream margins, and on the edges of swamps, which probably explains the distribution of Swasey and Xe communities in these very situations.

Mamom (Middle Formative) population growth led to expansive cultivation, or what has been noted as shifting agriculture. We will look at this system in more detail both for its potential and for its limitations. Many studies have been done of the Maya system of shifting cultivation, and

although there are variations from zone to zone, a general pattern prevails for the whole area. Corn farming was carried on by a variant of slash-and-burn or swidden agriculture. Typically, in this system a patch of jungle is cleared off and burned and the crop is planted in the ashes at the beginning of the rainy season. A family of five needs about 6,600 kilograms (3000 pounds) of maize (corn) per year, given the present-day diet and food habits of the Maya. There is reason to believe that these food habits were the same at the time of the Spanish Conquest and have changed little in the traditional villages since then.

In any period, prehistoric or modern, swidden agriculture imposes its own limitations on Maya life. For one thing, the field must be allowed to lie fallow after about three years of cultivation and given a four- to eight-year rest period. Thus, from four to eight times the amount of land in actual maize cultivation is locked up in fallow ground. Any shortening of the rest period would not allow the land to sufficiently recover its nutrients and would ultimately lead to catastrophic crop declines. The large amount of land necessary for a single family consequently imposes one other limitation—the number of people that can live together in one place. If most people wish to live within even a half-day's walk of their fields, then the number of people living together in a permanent farming village is finite. Thus, as population expands absolutely in numbers it also tends to expand through space, eventually filling up all available land and becoming fairly evenly distributed over the arable parts. This is exactly what the study by Koenig (pers. comm. 1978), mentioned in chapter 4, seems to show for the Mamom period. Even so, agronomy studies by Ursula Cowgill (1961, 1962), admittedly controversial, indicate that just by using the shifting cultivation system, with its dependence on corn as a main crop, the carrying capacity of the land would be about 58 to 77 people per square kilometer (150 to 200 people per square mile) and therefore capable of supporting a reasonably large urban population in addition to the rural sector. This is a considerable density, as shown by comparison with rural France, which averages 85 persons per square mile.

The Maya Swidden Cycle

Selection of the piece of land takes place sometime during the previous year. Choice is based on the soil, clayey soils being avoided, and drainage. Crops must be drained or they will rot either at the seed stage or later, so the farmer looks for sloping land with enough topsoil and forest on it to guarantee sufficient nutrients for his plants. By planting on the slopes, the farmer also avoids some of the danger of frosts, which occur in the lowest ground. A piece of land is then cleared during the dry season—from January to May for most of the area. This means arduous and difficult work chopping out trees and bushes and dealing with snakes, thorny bamboo,

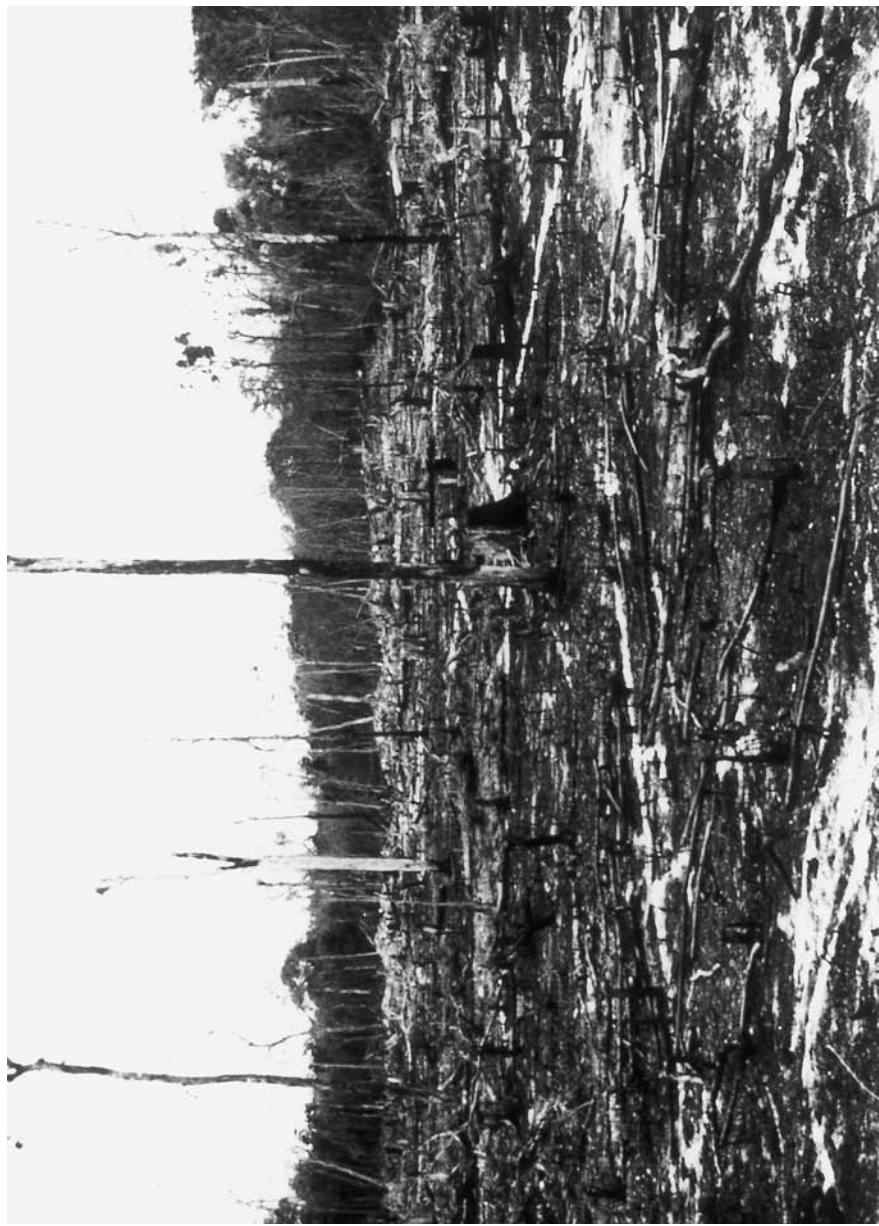


Fig. 5-1. Modern slash-and-burn agriculture, Rio Bec region, Mexico. A burned-over field ready for planting with ancient house mounds in the background. Although it was a good model for the Formative Maya, this extensive food-production system was superseded in the Classic period by more intensive techniques.

poisonous trees, and other hazards. A man's friends and family may help him, but much of the time he does it alone.

When a sufficient amount of land is cleared, the cut-down vegetation must dry. On a suitable day the vegetation is burned (fig. 5-2). This is a spectacular and dangerous business, and the criteria for a suitable day vary through the lowlands. In the northern lowlands farmers prefer a windy day, which will drive the fire through the field. In the Peten they wait for a windless day to avoid forest fires in the higher jungle of those parts. In any case the burning requires cooperation among neighbors, because the fires are set in many places simultaneously to get a "good burn." The field may burn and smolder for several days, although the fire has done most of its work in a few hours. The farmer has now reduced the biomass to usable nutrients for his domesticated plants (fig. 5-1). Another important decision then follows—when to plant. If the farmer plants too soon before the rains, the birds may get the seed corn. If he waits too long, the seed corn may rot before it germinates, or it may be washed out of the ground.

Planting is done by making a hole in the ash of the burned field with a sharpened stick. Kernels are dropped in, and with a swipe of the foot the farmer covers it up. Once the crop germinates, he need only occasionally weed it, but although he has a temporary respite from his labors, his anxieties continue. Hail lurks in the dark rainy-season clouds; high winds may also destroy or decimate the young corn plants. Late rains, insects, birds, and wild animals are an ever-present menace. Where corn fields have been cleared from the jungle, the small Yucatec deer multiply in response, being very fond of corn and quick to take advantage of the tasty meals at hand. Of course the farmer is not entirely the loser; he may hunt the predatory and well-fed deer, thereby balancing his diet with animal protein. Deer may also have been at least partially domesticated, as indicated in Spanish accounts of tame deer found in sixteenth-century Maya villages (D. E. Puleston, pers. comm. 1978).

Several other crops are planted in cornfields among the maize plants. Most common are varieties of beans, squashes, and pumpkins. Kitchen gardens also provide nutritional balance to the Maya diet, adding chile peppers, tomatoes, and other vegetables such as *buisquil*, which is not familiar to North Americans. Avocados are cultivated, as are cacao and vanilla trees.

All of this information on Maya diet and farming practices comes from ethnographic and early chronicle sources and fits the present-day as well as part of the prehistoric Indian situation (O. F. Cook 1921; Reina 1967; Sanders 1973, 1977). Many writers have emphasized the religious aura that surrounds the sacred maize or corn in the mind of the traditional Maya and the ritual that accompanied the various parts of the agricultural cycle in historic times. The same mystical attachment to the planting and raising of corn still exists today. There is also the "machismo" factor, which means



Fig. 5-2. Modern slash-and-burn agriculture. Burning off a patch of jungle at Altar de Sacrificios, Guatemala.

that a man is not demonstrably “male” unless he wrests a living from nature. This prestige element probably operated in ancient times also, as we shall see, but for different reasons.

Work by the late D. E. Puleston of the Tikal Project produced data that indicated to him the strong possibility that the Maya utilized the breadnut tree (*Brosimum alicastrum*) in ancient times as a partial substitute for maize. The nut produced by this tree is, in some ways, nutritionally superior to maize. Indeed, when the maize crop fails today, the Maya depend on the *ramon* or breadnut tree as a substitute source of vegetable protein. Through experiments, Puleston found that one type of underground chamber (*chultun*) is suitable for the storage of *ramon* nuts, which survive up to eighteen months. However, experiments with smoked maize shows that it too will last for considerable periods in *chultuns* (Reina and Hill 1980). Moreover, observations by other archaeologists, botanists, and geologists in the field have led to the conclusion that the *ramon* tree is unreliable in the same years that the maize crop fails and that the correlation between *ramons* and ruins is due to the preference of the tree for well-aerated soil. Because of this, the trees tend to colonize the stony ruins, where they obviously were not growing in ancient times.

Marine resources were also quite important in the diet of those people living near the coasts (Eaton 1978; Ball and Eaton 1972; Lange 1971). This is evidenced by large amounts of shell and fish bones in middens near the shores and on the beaches of the peninsula. As a colleague has observed, the peninsula is surrounded by one vast soup, teeming with food resources. Finally, we do not doubt that many roots—probably including yucca, *camotes*, manioc, and a number of others that were available for digging—were used as food. Again, the investment in labor and resources is minimal and the return is great (Bronson 1966; U. M. Cowgill 1971; Sanders 1973).

With all of these supplements and mixes of food production and extraction, by the Late Formative the Lowland Maya were being pressed by population growth to explore new avenues. The third phase of Maya agricultural history began when they were forced to begin wetland cultivation, a phase we might label as one of extensive-intensive cultivation. We now know that swamps were being drained and modified in northern Belize by the Late Formative (Chicanel) period. Evidence from Pulltrouser Swamp (Turner and Harrison 1983) as well as from Cobweb Swamp 30 kilometers (19 miles) south demonstrates that raised fields, drainage canals, and probably sluice gates and other water control devices were being built (fig. 5-3). Huge numbers of stone tools were produced at Colha, located on the edge of Cobweb Swamp, for use in the building, maintenance, and cultivation of the raised fields (fig. 5-4; Iceland in press). Further, Richard Hansen (2001) has found that Late Formative people in the Nakbe (Mirador) zone were hauling tons of fertile *bajo* soils up the surrounding hillsides to fill



Fig. 5-3. Low-level shot of raised fields in northern Belize at Pulltrouser Swamp. This and many other confirmations of the radar imagery indicate that ancient use of wetland gardens by the Maya was extensive.

up hundreds of stone terraces. Separately, Gunn et al. (2002) discovered that the edges of the gypsum-laden Calakmul *bajos* were devoid of horticultural activities until enriched by soil eroding down from the occupied and farmed areas of the surrounding uplands during the Late Formative. Alfred Siemens and Puleston (1972) were the first to detect and report raised fields, in this case from a river zone in the western lowlands, but it seemed to them that this was a Postclassic phenomenon and limited to watercourse edges. J. D. Eaton found extensive field walls and terracing in the Rio Bec zone in 1968, which B. L. Turner (1974) later confirmed and estimated at more than 10,000 square kilometers (3,860 square miles) in extent (fig. 5-5). Much of the Maya Mountains around Caracol were also terraced (Healy et al. 1983). By aerial inspection, the vast Bajo de Morcoy in Quintana Roo was seen by the same two investigators to contain great numbers of canals and raised fields. Turner later confirmed this by ground inspection.

All of this work indicates that by end of the Late Formative, the Maya were heavily investing in the labor, planning, and materials needed for major landscape modification for the purposes of agronomy. This process continued through the Classic period (A.D. 250–850), and it appears that eventually every major swamp in the Maya Lowlands and every watercourse



Fig. 5-4. Stone tools from Rio Azul, Peten, Guatemala, where they were found in association with ancient raised fields and mounds of stone tool manufacturing debris.

or lake edge was exploited for wetland gardens (map 5-1). Evidence for this extensive-intensive phase includes radar mapping of a large part of the southern lowlands, a zone of 36,200 square kilometers (14,000 square miles), of which we estimate at least 1,285 square kilometers (496 square miles) were modified by drainage (R. E. W. Adams, Brown, and Culbert 1981). This is a much larger amount of land than that modified by the later Aztec, which was about 120 square kilometers (46 square miles). However, as will be noted in more detail in a later chapter, there are differences of scale between the Basin of Mexico (7,823 square kilometers, or 3,020 square miles) and the Maya Lowlands (250,000 square kilometers, or 96,500 square miles). To date (2004) at least twelve separate confirmations have been made by about that many projects. Thus, it seems that at last we have laid hands upon the economic basis for Maya civilization. Wetland developments seem to have made possible the appearance of true urban centers in the Maya Lowlands. The largest Maya cities are located on

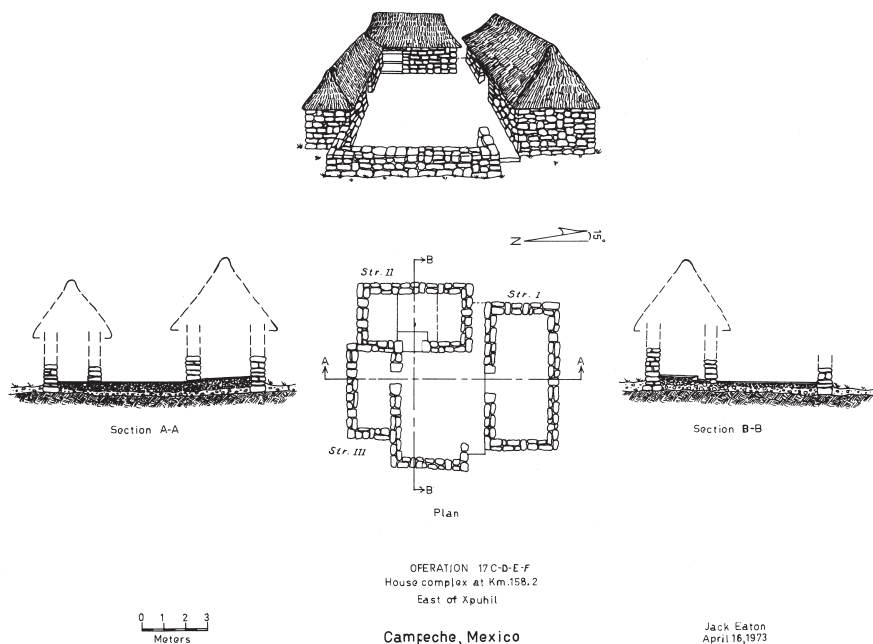


Fig. 5-5. Late Classic farmstead in the Rio Bec countryside, about 5 kilometers (3 miles) east of Xpuhil. Two residences are supplemented by a storage house and a stone wall. This and innumerable other farmsteads are located atop terraced hills in the Rio Bec region. Presumably, farmers living in these dwellings operated the terraced gardens and fields. (Courtesy Jack D. Eaton)

the largest swamps, which, if we are correct, were the largest food-production zones.

Based on recent research, Nicholas Dunning (Dunning et al. 2002) points out that some small *bajos* such as Dumbbell Swamp in Belize once held water year round but were filled in by soil erosion in the Late Formative and capped by heavy clay seals.

Water Management. Vernon Scarborough (1994) has pointed out that because of the need for water in the annual drought, any concentration of people over the size of a medium-sized village (ca. 350 people) either must be located on a lake or river or must build reservoirs. Nakbe, Mirador, Wakna, and other early Maya centers of the Late Formative were located on the edges of shallow lakes. As will be seen, these cities and their lakes were gone by A.D. 100, probably as a result of environmental abuse. Those cities that grew largest and lasted longest, such as Calakmul and Tikal, built carefully

designed and constantly improved reservoirs. The need to organize the labor necessary for construction and maintenance of such storage facilities was probably one of the driving forces leading to a state-level society in the Maya Lowlands. Further, once the water resource was established, the growing urban populations could not do without it, and stored water also became a means of social control.

Settlement Patterns and Population Sizes

The direct evidence of census material for ancient Maya populations does not exist. Therefore, given that we cannot directly count people, we must use indirect means of assessing population. The traditional means of doing this consists of counting the seemingly countless house mounds that still dot the lowlands. It also, less traditionally, consists of doing volumetric assessments of the masses of formal architecture in the civic centers. The first means leads to estimates based on the numbers of platforms occupied during a given period as well as on an assumption that ancient Maya families had about the same numbers in a household as present-day Maya. The second means leads to more generalized estimates based on the assumption that the larger a center, the more people it controlled to build and maintain it. Further, because buildings are meant to be used, the larger the center, the more people would be using its marketplace, its reservoirs, its palace buildings, and so forth. Let us consider the implications of studies of house mounds.

House mounds are the small platforms of clay, earth, and stone built to support the domestic housing of the majority of ancient Maya. These small structures supported perishable, thatched-roofed, pole-and-clay-walled (wattle-and-daub) houses that remain long after the superstructures have gone. The distribution of these small structures is nearly universal over the countryside around the larger sites. One major problem has been to draw boundary lines around the rural sustaining areas and therefore around the house mounds that represent the populations that supported Maya cities, towns, and fortresses. Hubert Robichaux's scrupulously careful work in the Three Rivers Region (Robichaux 1995; R. E. W. Adams et al. 2004) has defined thresholds of 6 to 8 kilometers (3.72 to 4.96 miles) from the paved areas of Maya cities as being the inner urban centers plus their immediately supporting populations. Thus, we can now speak of at least three populations: urban, urban-support, and rural.

Studies combining survey and excavation have given us fairly precise estimates as to densities and fluctuations through time. For most of the lowlands, the peak population period was the Late Classic. However, it appears that certain restricted zones were also high-density population centers earlier in the Early Classic and in the Late Formative. Densities in the Late Formative seem to have reached a maximum of 40 people per

square kilometer (104 per square mile) around Dzibilchaltun in the north (Kurjack 1979), with perhaps as much as three times that amount in the south, which had deeper soils and better water. These high populations seem to have been clustered around their centers and to have formed enclaves of developed farmlands in somewhat the same manner as the early Sumerian cities.

Volumetric assessment of early centers such as Nakbe and Mirador indicate a very large number of people involved in construction activities (Matheny 1986; Hansen 1991). The Late Formative temple structures at Mirador also indicate a firmly entrenched elite. At Rio Azul, in the northeast Peten, large platforms and probably a very large temple building were built in Chicanel times (R. E. W. Adams 1986; Valdez 2004). At Tikal some of the temples of the north acropolis and the huge Mundo Perdido (Lost World) pyramid were built in the Late Formative. The demographic estimates for these periods indicate that thousands of people were involved in each of these and other cases. In Early Classic times, population growth continued more or less at the same rates, but with a jump in construction activities. Tikal is estimated as having had twenty-five thousand people at about A.D. 450 (Culbert et al. 1990). At Rio Azul we estimate not more than fifty-five hundred people in the largely Early Classic city (R. E. W. Adams 1998, 141). However, huge buildings with masses of up to 97,000 cubic meters (126,876 cubic yards) of fill, such as temple complex A-3, were being built. Again, the implications are of far more people than could be housed at that city and in this case it seems likely that construction crews were imported from the south.

The Late Classic is the period of maximum populations and is the best controlled, because the remains of this period lie atop the earlier materials. In the center of the Yucatan peninsula, populations of A.D. 750 peaked at perhaps 450 people per square kilometer (1,166 per square mile; Eaton 1975; Turner 1974; R. E. W. Adams 1977b). In this case more than 10,000 square kilometers (3,861 square miles) of hillsides were terraced and walled, and farmsteads were located atop hills, with many groups of farmhouses on the flatter ground. Further south, in the Three Rivers region, population boomed to about 178 persons per square kilometer (69 per square mile) in a zone of very poor soils.

In the Belize Valley it was possible to define segments of the river and associate the house platforms on the valley bottoms with the civic centers of the region. Willey and his associates estimated that as many as 24,000 people were living on about 600 square kilometers (about 232 square miles; Willey et al. 1965). It is estimated that about 6,000 people were associated with each of the major civic centers of the Belize Valley. However, this figure is conditioned by the old constraints of swidden-maize agriculture, because the evidence for intensive agriculture was not available at the time. Adjusting

for the new potentials given by intensive cultivation, it appears more likely that up to 180,000 people, more than seven times the old estimate of 24,000, may have been present during the peak period of the Late Classic.

It is not possible at the moment to make estimates of total populations for the periods before the Late Classic. For the latter period, in the eighth century A.D., it is possible that Maya Lowlands populations peaked at between 9 and 14 million. That these populations lived a precarious existence indeed is demonstrated by the catastrophic demographic collapse that followed in the next century. To summarize, the Late Formative seems to have involved regional societies of thousands of people; the Early Classic, of tens of thousands; and the Late Classic, of hundreds of thousands.

Small villages, mainly made up of kinship units, constituted the main settlement pattern during most of the Formative. During the Late Formative the picture changed from a landscape dotted with these hamlets and villages to one in which some villages had become regional centers with public architecture. Some of these became very large and some of the largest masses of material ever piled up by the Maya were assembled at this time, notably at Mirador. Many other Maya sites show evidence of regional organization into hierarchical patterns made up of at least three, and sometimes four, levels of communities.

Maya Cities and Their Functions

A great deal of scholarly blood has been spilled over the issue of whether or not what J. Eric Thompson called ceremonial centers were cities. The results of the past twenty-five years of research have answered that question resoundingly in the affirmative. In present research we are concerned with the internal structure of Maya cities, their differing functions from site to site, their population sizes, and their political relationships.

Maya cities varied in size and complexity from region to region and from period to period. By the beginning of the Classic, there is little doubt that most of the regional centers of the Late Formative had assumed city status in the sense that it has been defined in chapter 4. However, it has become ever clearer in recent years that the first great florescence of Maya civilization was in the Late Formative. Primary evidence for this conclusion has come from the discovery that many major Maya centers, such as those mentioned earlier, were already cities in status by the time of Christ or slightly afterward. These communities are associated with tentative or certain evidence of intensive agriculture and high-density rural populations. Early and late, however, all Maya cities had certain constant, formal qualities that were combined in various ways in order to meet the special needs of each case.

There are several major formal classes of public architecture in all major Maya centers: temples, palaces, ball courts, raised road systems (*sacbes*), and

reservoirs. In some cases fortifications were added, but this was not as invariable a component as the other elements seem to be.

By the Middle Formative, buildings were being made of cut limestone masonry covered with a strong stucco plaster to protect the structure from rains (W. R. Coe III and M. D. Coe 1956; Hansen 1991). With lines and angles thus softened and smoothed, buildings were flowing and more curvilinear than we see them today. Rubble cores of rough stone, sometimes mortar, earth, and even wood, made up the mass of the structures. The limestone walls often—especially later in the Classic period—formed a sort of veneer over the rough hearting. Generally good-quality mortar was used to cement the stone in place. As pointed out by Laurence Roys (1934), the ultimate structural strength of a Maya building is really that of a concrete building tied together by the mortar and rubble mass, with not much integrity given by the masonry skin. Roofs were built using the corbeled arch system, which involved edging stones on opposing walls toward one another, course by course, until the space was small enough to be bridged by a capstone. This form of vault allowed rooms of up to fifteen feet in width, but the usual size was smaller, and Maya rooms tend to be long, narrow, and high.

Temples

Maya temples are generally elevated on terraced substructures (figs. 5-6, 5-7, 5-8). These supporting platforms vary in height and width but are generally solid and without chambers except for tombs and associated passages. The temple structure itself is usually small compared to the mass of the substructure and has relatively little space inside, and even that may be occupied by benches and altars. Very few people could be accommodated within such a building. The rooms are high and narrow due to the use of corbeled vaults, but they were also deliberately made so. The roof of the temple often carries an ornamented wall, called a roofcomb, decorated with modeled stucco. These elevated walls can be interpreted as “political billboards.” Most temples show remnants of such stucco decoration and red paint, often over most of the building as well as on the roofcomb. Burn marks on the floors, masonry altars, and walls indicate the repetitive use of copal (pine resin) incense. The fragrant smoke of copal permeates the atmosphere today in Maya communities when religious affairs are being conducted. Other evidence indicates the use of these buildings as ritual structures. Elaborate caches of exotic materials, precious to the ancients, are found beneath floors and in masonry altars. These offerings include items of jade, stingray spines, imported seashells, and other symbolic materials. At Tikal such caches are so consistently patterned that archaeologists can predict the nature of the caches and their locations. The traditional interpretation of temples has been that they were centers for the worship of

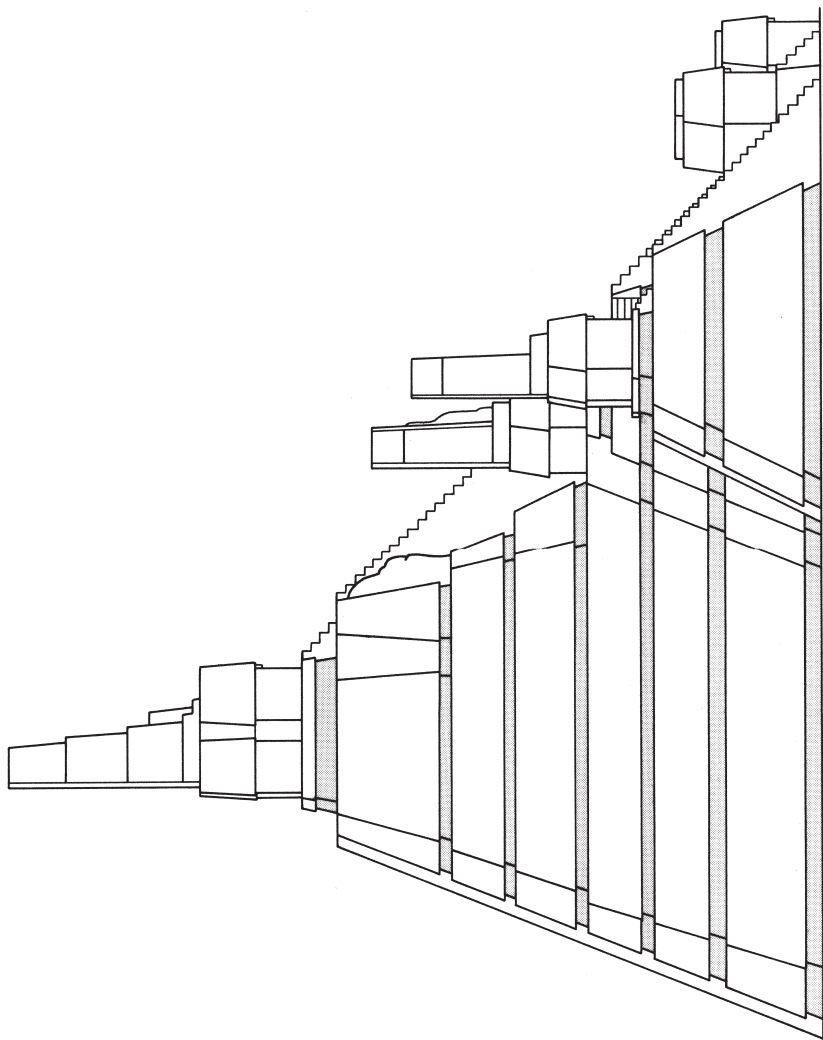


Fig. 5-6. Restoration drawing of a major temple complex at Rio Azul, Guatemala. The tallest structure, A-3, was about 155 feet (47.3 meters) in height and dates to the middle of the Early Classic. Painted tombs were found in the bedrock beneath the temple platforms. (Courtesy Miguel Orrego and W. Bruce Ellis)



Fig. 5-7. An Early Classic temple at Lamanai, Belize, with a still-intact, elaborate modeled stucco panel, including mask. Excavated by David Pendergast.



Fig. 5–8. A very late temple (A-III) and its stelae at Seibal, Peten, Guatemala. All five stelae and the temple date to A.D. 849 and probably celebrate the accession to power of a new group of Maya rulers, possibly usurpers from Yucatan.

the impersonal deities represented in Maya art. This is partly true, but with new evidence it seems that we can go farther.

Carved wooden beams often spanned the doorways of temples. Those that survive are resplendent with florid and symbolic depictions of gorgeously attired persons, surrounded with scrollwork, serpents, jaguars, and so on—the panoply of power and authority. Complex texts of hieroglyphs accompany the depictions. As will be seen in the discussion of Maya writing, these texts often include historical information.

Similar subject material is found on a giant scale in the modeled stucco decoration. Super-sized human figures seated on elaborate benches and surrounded with symbolism of divinely attributed authority can still be made out on some of the badly battered roofcombs. Hieroglyphic texts accompany some of the depictions, perhaps all of them. The major key to the interpretation of the function of the temple type of building lies in the sumptuous tombs often found within them and in the nature of the carved stone monuments called stelae.

In 1956 Michael D. Coe suggested that one of the functions of a Maya temple was to serve as a final resting place for distinguished members of society. Indeed, it seems that if one searches long enough through the

often immense mass of rubble of temple substructures, an elaborate burial will often be found. The famous tomb found by Alberto Ruz (1973) in the Palenque Temple of the Inscriptions is one of the most elaborate examples of this sort of mortuary structure. In both this tomb and others at Palenque, there is a feature called a psycho-duct, which is a small tube leading from the tomb up through the masonry to within a few feet of the floor of the temple building. Several other tombs at Palenque have the same feature. It seems clear that here we have an attempt at maintaining communication with the person placed in the tomb below. This would be something like the *sipapu* in kivas of the Pueblo Indians of the southwestern United States, which allows communication with the spirits underground. Thus, both the common occurrence of elaborate tombs and the psycho-ducts seem to confirm Coe's idea. However, there is more to be said, and we must now consider the nature of the stelae and a little of the content of their texts.

Stelae

Stelae are carved stone shafts that were most often erected in association with temple buildings (figs. 5-9, 5-10). T. Proskouriakoff's revolutionary studies (1960, 1961, 1963, 1964) indicate clearly that stelae were historical monuments erected to record the exploits of rulers, their genealogies, the circumstances of their birth, and probably, justification for their political power. Groups of these monuments were associated with single temples at Piedras Negras, each stela group dealing with the events of a single ruler's lifetime. The frequent physical association of Maya stelae with temples suggests a ritual and functional association. Indeed, at least one temple on which the stucco decoration was fortuitously preserved at Rio Azul seems to duplicate the standard arrangement of texts and depictions found on stelae (R. E. W. Adams and Gatling 1964; R. E. W. Adams 1999). Specifically, the human figures are on the broad surfaces of the roofcomb and building, and the hieroglyphic texts on the narrow sides of the structure. This physical analogy suggests a functional analogy and that temples in some way were historical, commemorative monuments.

To summarize, temples would seem quite often, perhaps always, to be memorials to the distinguished dead. The implications of this will be further explored when we consider the nature of Classic Maya society.

Palaces

Palace is a catch-all term used to designate what are usually multiple-room, occasionally multiple-story buildings with a nearly endless variety of ground plans. As will be seen, some were truly luxurious residences, fitted with service facilities. Others were more suited for administrative functions. Still others include dim and dark rooms that seem only usable as storage

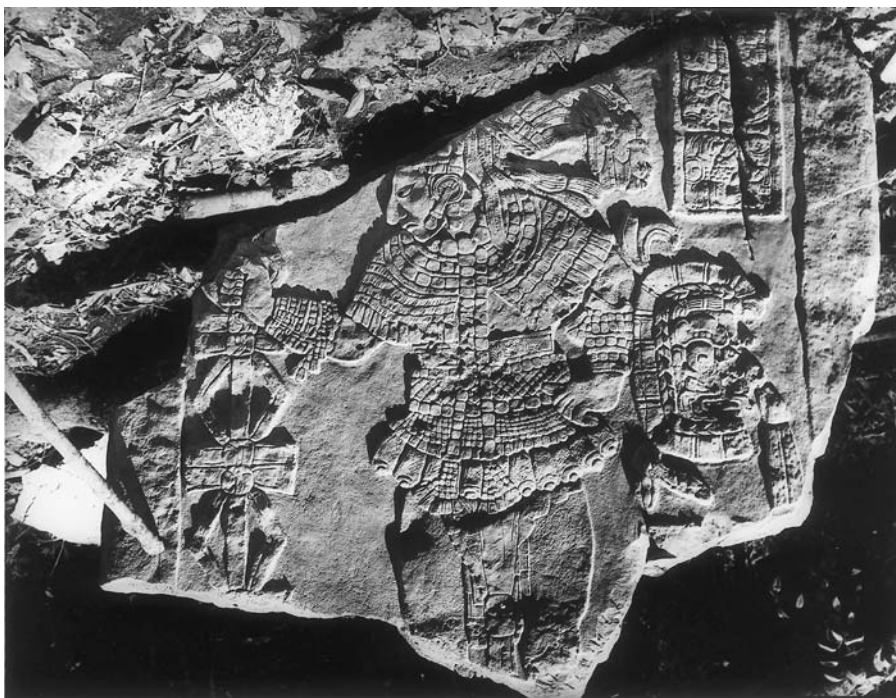


Fig. 5–9. A portion of Stela 1, dating 9.17.10.0.0, or A.D. 780, at Bonampak, Chiapas, Mexico. A ruler named Chaan-Muan is shown, according to P. Mathews. The famous murals at this site celebrate Chaan-Muan, showing him with his colleagues and allies in ceremonies and a battle. (Courtesy Giles G. Healey)

facilities. Finally, there is little doubt that many palace rooms have features that fit them for ritual and ceremonial practices.

Many scholars have objected to classification of palaces as elite-class residences. Objections have been made on the grounds that the buildings are dim, dark, slimy, damp, cramped, and unfitted for comfort. This seems an excessively ethnocentric and unimaginative approach. At the present, palaces indeed deserve all of those opprobrious adjectives, but this is after eleven hundred years of abandonment and neglect. Moreover, judging from their own depictive sources, the Classic Maya elite class had their own idea of what constituted comfort.

In many ways the elite life-style seems to have been something like that of traditional Japanese culture. The commonest sitting position shown is cross-legged. The Maya seem to have made relatively little use of furniture of any size. Most is in the form of low tables, boxes, and other portable items. Most domestic life seems to have occurred either on benches built into the palace rooms or on benches elevated on feet. Rooms with benches



Fig. 5-10. Seibal Stela 8, one of the five stelae at the site that mark the date of A.D. 849.

are commonly the widest to be found in palace structures, and the benches occupy up to 95 percent of the floor space. With mats, cushions, and a minimum of portable furniture, rooms could be changed in function as need arose. Indeed, the floor plans of what seem to be "apartments" in the A-V palace at Uaxactun provide some evidence that there was relatively little interior space for any single occupying individual or family. Cupboards built into walls presumably stored items needed only at night, such as light blankets. Thus, the multiple use of rooms, the cross-legged sitting position, the use of portable furniture, and the ready availability of outdoor space all would make the larger rooms with benches quite suitable for living areas. Paved courts and terraces are often found in front of such rooms; with the use of canopies or temporary awnings, some of which are shown in Maya murals and evidenced by post holes in the courtyards, these pavements would have been supplementary living areas.

Simple maintenance would take care of a great many of the other objections to the use of Maya palaces as residences. Cutting down the present vegetation, restoring paved courts around the buildings, cleaning walls, and keeping up water-tight roofs all would contribute to creature comforts. Under such circumstances, with the major buildings surrounded by acres of heat-reflecting pavements, the dimness and coolness of the interior rooms would have been absolute assets.

Certain palaces have been found with built-in conveniences. It seems clear that Becan Structure IV palace has an interior drainage system that could be used with a shower or bath (Potter 1973). The floor slopes to the drain. In the same building a built-in fireplace was also found. These features are unusual, however, and it seems that domestic necessities such as kitchens and latrines were most often located in supplementary and even perishable minor buildings. In 1984 J. D. Eaton and Farrior (Eaton 1986) found servants' quarters and cooking facilities built into the Rio Azul palace areas, and Kent Day (pers. comm. 1970) found a cook shack near a palace at Tikal. At Copan, elite residential groups had small kitchens on platforms on a corner of the compound. At Edzna, Becan, and Piedras Negras, steam baths were available for the use of the inhabitants of the palaces on the other sides of adjacent courts. There is evidence that the courts, buildings, and rooms were kept swept and clean and that debris was carried to selected dumps. Not much is known about sanitation facilities, but perhaps some of the more humble types of Maya pottery functioned as chamber pots. The average adult produces about a pound of solid waste per day, which, in massed populations, would present major problems of disposal. Populations of ten thousand would have about six thousand adults and therefore six thousand pounds of problems at the end of each day, or forty-two thousand pounds at the end of each week. Perhaps the underground chambers, *chultuns*, partially served the purpose of waste

disposal, or the waste might have been spread on the fields as fertilizer, as in the case of the later Aztec and the historic cultures of the Far East.

The question of the sizes of populations resident in palaces is one to which an approximate answer can now be given. By considering the probable function of rooms with benches and making a couple of other assumptions, we can arrive at ceilings on the numbers of people that could have been accommodated. One way to get at this figure is through consideration of sleeping space available. Sleeping quarters are the minimum requirement for residences. Assuming that we are correct on the functions of benches as primary living spaces, and assuming that these functions included sleeping, then the benches were also beds. There is equivocal evidence for the use of hammocks in pre-Hispanic times, and this device, so popular now among the Lowland Maya, seems to have been introduced from the West Indies about the time of the Spanish Conquest. In any case, there is no evidence that the hammock was very popular even if it was present. Protected sleeping space for the inhabitants of the palaces is limited to the benches, and these can be measured for maximum capacity. Assuming also that the proportional mix of ages and sexes in such a palace population was something like that of the ethnographic Maya, one can make certain estimates. For all the palaces at Uaxactun, a medium-sized center, this would mean a maximum population of about 185 persons, which would break down to 125 adults and 60 children. At Uaxactun these persons would be perhaps controlling and directing a supporting population of about 18,500. Considering that adult males are most often mentioned in the hieroglyphic texts and therefore probably were most important politically, it may be that about 20 adult males managed affairs at places such as Uaxactun (R. E. W. Adams 1974a). Chicanna, to the north, had space in its eighth-century palaces for about 88 people, while one Early Classic Tikal royal palace (5D-46) had a capacity of 34 (R. E. W. Adams 1981b; Harrison 2003).

Based on their studies at the site of Coba, W. J. Folan, L. A. Fletcher, and E. R. Kintz (1983) came to the conclusion that the city had a population of about forty thousand minimum and a maximum palace population of about four hundred, or 1 percent of the total. This is about the same ratio of elite to total population as at Uaxactun. However, this small directing group at Coba was supplemented by subordinate groups at the tributary cities, which also had their own supporting populations.

Calakmul was a very large capital city of about fifty thousand people in A.D. 750. Folan and his colleagues have shown that it was at the center of a web of subordinate cities, with some of them connected by the raised roads. Huge reservoirs supported the populations, as did special forms of wetland gardens.

Activities of the elite class embraced politics, religion, and economics. Administration was assisted by a kind of civil service, probably made up

of members of the minor nobility and perhaps including lower-ranked groups of specialists, such as stewards of elite estates. Properly arranged quarters were necessary for the provision of the ritual and ceremonial context that seems to have surrounded Maya nobility. There are many palaces that have parts fitted out for religious affairs and perhaps for court protocol. Long, narrow rooms, largely open on one side, with a central throne or altar, probably served these functions (A. L. Smith 1950). Administration could have been carried out in subsidiary rooms, which are suitable for living but near dead-end spaces suitable for storage. The Group III (Court B) quadrangle at Holmul might have been such an administrative and storage headquarters. In the center of the quadrangle there is a building with the large rooms and benches characteristic of the living zones. There is at least one “throne as revealed by recent excavations” (Estrada Belli 2002). Perhaps a ruler or chief bureaucrat lived there. The rooms surrounding the quadrangle are narrow, mostly without benches, and many are interior spaces without ventilation or light. Presumably here were kept the food surpluses that supported the elite, the servants that cared for them, and the craft specialists whom they supported (R. E. W. Adams 1970). Here, too, would be kept elaborate costumes, valuables that gave prestige, and weapons for both war and hunting (Merwin and Vaillant 1932; Estrada Belli 2003).

Marketplaces

Institutionalized trade is a longstanding trait of Mesoamerican civilization going back to the Middle Formative. For most people in Maya societies, Classic-period trade took place within a closed regional system. It seems clear from the distribution of artifacts and from technological studies that certain communities, hamlets, and villages specialized in the manufacture of particular items in Classic times. This would fit with the present-day pattern of conservative Indian culture in areas such as the highlands of Chiapas, where certain towns specialize in crafts such as pottery making. These specialty manufactures are now distributed through a regional market system. However, there is also evidence that in Classic times at least certain crafts, such as the manufacture of polychrome pottery, were done by artisan families attached to noble households. Textiles, pottery, chert and obsidian tools, feathers, food, drink, salt, raw materials, wooden artifacts, and much else must have circulated through regional economies in Classic times by means of systems based on the local urban centers. Combined with the model of an aristocratically led social structure, the evidence for internal circulation through a region implies both a redistributive and a market system. This is an economic arrangement that is more characteristic of archaic and generalized feudal states than of chiefdoms. Large buildings and controlled paved zones have now been identified as probable markets in

Tikal, Rio Azul, and other places. Warehousing has been tentatively identified for some centers. Tikal has a very convincing ancient "mall" with permanent stall areas grouped into a quadrangle. These buildings are located in the East Plaza behind Temple I and date to the Late Classic (C. Jones 2003).

Open plazas also functioned for public ceremonies of importance to society as a whole. Amphitheaters have been identified at two sites in the Rio Bec region, each of which has a capacity of about eight thousand people (Ruppert and Denison 1943). Events depicted in Maya art that may have been staged in such spaces and buildings include the judgment of captives after conquest, religious rituals, political ritual, and possibly even sports competitions. However, no evidence for theater, even in the form of "passion plays," exists for the Classic Maya.

Finally, paved open spaces also functioned as additional living space for palace inhabitants, their retainers, and perhaps even for people temporarily come to town. Foundations of ephemeral structures have been found in plaza areas at Becan (Potter 1977). As noted earlier, the vast paved zones in cities such as Tikal, Calakmul, and Kinal served as artificial watersheds, feeding the large reservoirs. The latter, in turn, sustained the urban populations through the annual dry season.

Sacbes

Elevated roads or causeways, *sacbes*, often connected important building groups within the civic centers. Especially in northern Yucatan, these roads also form a network of connections among various urban centers (Kurjack and Garza 1981). These roads are elevated up to 4.5 meters (15 feet) above the terrain and are up to 18 meters (60 feet) wide. They are made in the usual Maya manner, with a rubble core and cut stone judiciously used to give them a finished appearance. Finally, they were cambered in the center for drainage and paved with a hard plaster. The primate city of Coba seems to have made a consistent effort to connect itself by *sacbes* with its apparent tributary cities (Folan, Kintz, and Fletcher 1983). Calakmul is connected by at least seven *sacbes* to its suburbs and subordinate centers. It also appears that at one time Calakmul was connected to Mirador by a road (Folan et al. 1995).

The functions of these roads has been suggested to have had commercial, military, and religious functions. Indeed, given the now-known high populations of the Classic Maya, they gave rights-of-way through crowded landscapes. Further, it can be shown that although the roads were intolerably hot and brilliant reflectors of sunlight during the day, they may well have functioned as travel routes during the night. The "white ways" (*sacbes*) would have been cool and even visible in the dark, and therefore feasible routes for trains of porters, people traveling for all purposes, as well as couriers, and military groups. Joseph Ball has argued persuasively that an ancient

custom of carrying patron deities from one town ward to another in order to visit other patron deities was carried out on the internal road nets of the cities. Indeed, as he notes, in the case of one present-day Yucatecan town (Acanceh) the similar visits of patron saints follow the ancient, tree-covered, and otherwise disused causeways of the town.

Fortifications: Moats, Walls, and Citadels

In most Mesoamerican centers, the ultimate refuge in war was the chief temple of the town. The weapon systems of the time (spears, spear-throwers, rocks, slings, and so on) made the height and steepness of such buildings a formidable advantage. In addition, the interlocking nature of the buildings would allow mutual support by the groups fighting from them. The Maya were probably no exception to this pattern. However, it is now known that the Classic and Late Formative Maya built more formal fortifications than nearly any other group in Mesoamerica. Dry moats of formidable length protected Tikal, as already noted. A very large moat and ramparts encircled Becan, and a wide moat filled with water surrounded the Edzna citadel. All of these fortifications date to the Late Formative. Substantial walls were also favored in some sites; at Mirador there is a probable Late Formative example that runs for over 600 meters (1,980 feet; I. Graham, 1967). A probably Late Classic wall at Calakmul is still over 6.15 meters (20 feet) high and 2 meters (6.5 feet) thick and runs for more than 2,000 meters (6,600 feet; Ruppert and Denison 1943; Fletcher, Hau, Florey Folan, and Folan 1987).

At present the best-known dry-moat fortress is at Becan, Campeche, where the ditch is about 1,600 meters (1 mile) in circumference and was found to have originally been about 12 meters (40 feet) deep and some 18 meters (60 feet) across (Webster 1974). Formidable parapets increase the height of the interior lip of the ditch, and these may have been strengthened by the addition of log palisades. Seven narrow causeways cross the Becan moat; they show signs of having been simultaneously cut in the ancient past, evidence that the fortifications were not simply built against a contingency. One causeway had been cut again and left open in Late Classic times. In the combination of its isolation in the midst of surrounding swamps, its carefully guarded access to water, and its enclosing ring of fortification, Becan is unique only in the detail in which it has been studied. The Maya Lowlands are littered with fortifications and true fortresses (R. E. W. Adams 1981).

There are at least two sites that have the characteristics of hill forts or citadels. One is the hilltop fortress of Oxpemul (Robichaux, pers. comm. 2004), and the other is Kinal. In both cases exceedingly steep rises face any hostile approach, and in the case of Kinal the rise is partly composed of

terraced, sheer masonry walls at the top of a ridge and backed up with still more walls atop a 9-meter (30-foot) platform (Robichaux and S. C. W. Adams 2004).

Many other Maya sites are potentially defensible in their locations on ridges and next to formidable ravines. Seibal is an example. We have no idea at the moment, moreover, how many sites may have been defended by perishable military works that are detectable only by careful excavation. Deliberately fostered tangles of thorny second-growth jungle in belts around Classic sites could have acted as deterrents to attack. Bolstered by palisades, fields of sharpened stakes, deadfalls, and the occasional features of formal construction, Maya centers would not have been the defenseless, open communities that they seem at first sight.

Ball Courts

Another functional class of formal architecture found in Maya sites is the ball court (fig. 5-11). This is a manifestation of the Mesoamerican ball game played with a solid rubber ball. Although the courts do not bulk large in mass or numbers, they occur frequently at large and small sites. The game varied in style and rules from place to place and through time, as reflected in the bewildering assortment of courts from all over Mexico and Guatemala. However, certain common features probably tie these games together. It seems that either individual players or teams could play, judging by accounts of the conquerors and native sources. Sometimes the idea was to score points on the other side, and, within an allotted period of play, the highest score won. A variant seems to have been that a single score won the game. This happened when a goal was so difficult that only one score could reasonably be expected.

In Conquest-period Mexico, the game had both recreational and divinatory functions. There is no knowing, at this point, how much of this sixteenth-century data we can extrapolate back in time. The Maya Classic ball courts are so distinct in form and style from later courts that the game may have differed radically. The safest things we can say are that the game was played in some form, that it was popular, and that it was associated with elite-class life. The courts occur only in the urban centers. This does not mean, however, that play may not have taken place on informal courts away from the centers. Indeed, the game is still played to this day in an impoverished form by peasants on the west coast of Mexico, the court marked only by a few stones at the corners and by lines drawn in the dirt.

Scarborough and his colleagues in a conference (Scarborough and Wilcox 1991, ix) mainly agreed that the ball game also had an important political purpose: mediation and resolution of conflict within and between groups in Mesoamerica. A historical example will be seen in the Aztec chapter.

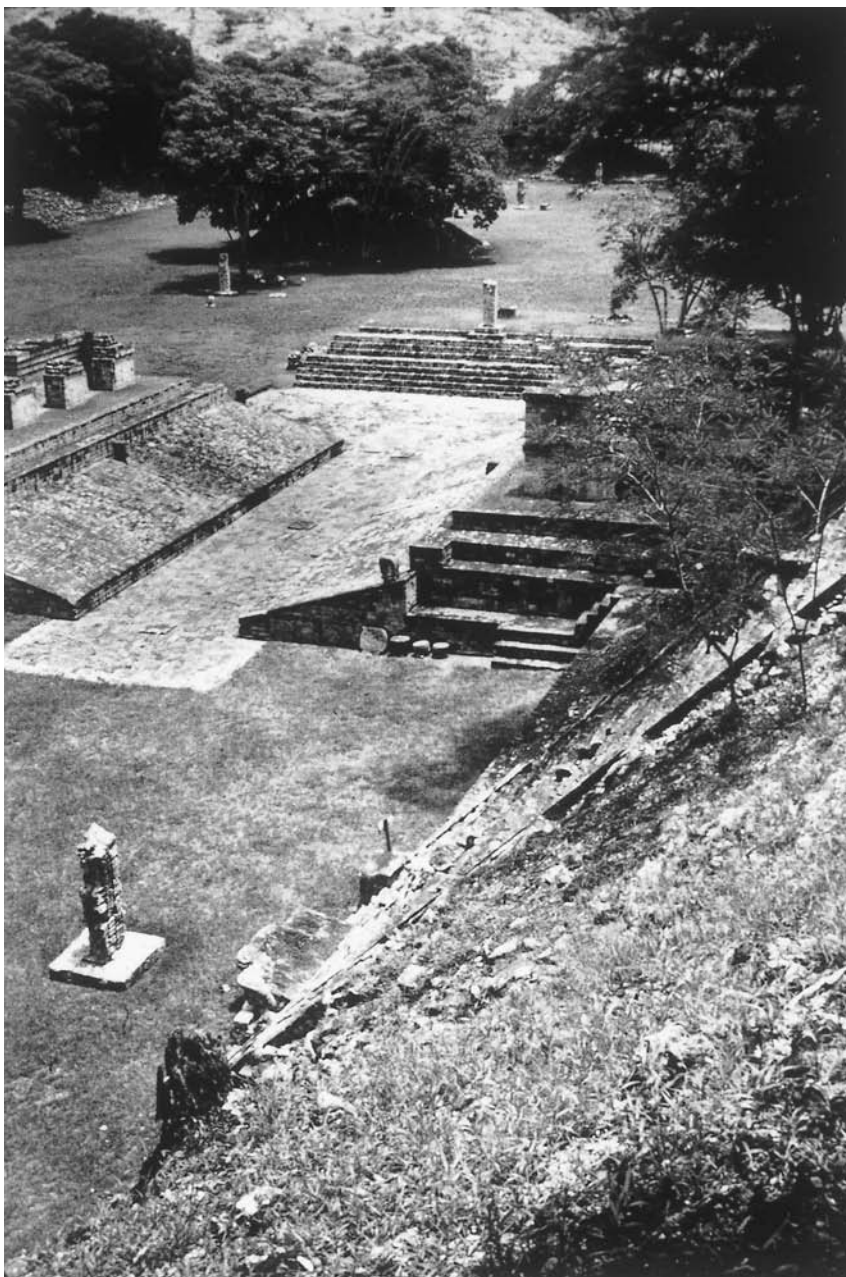


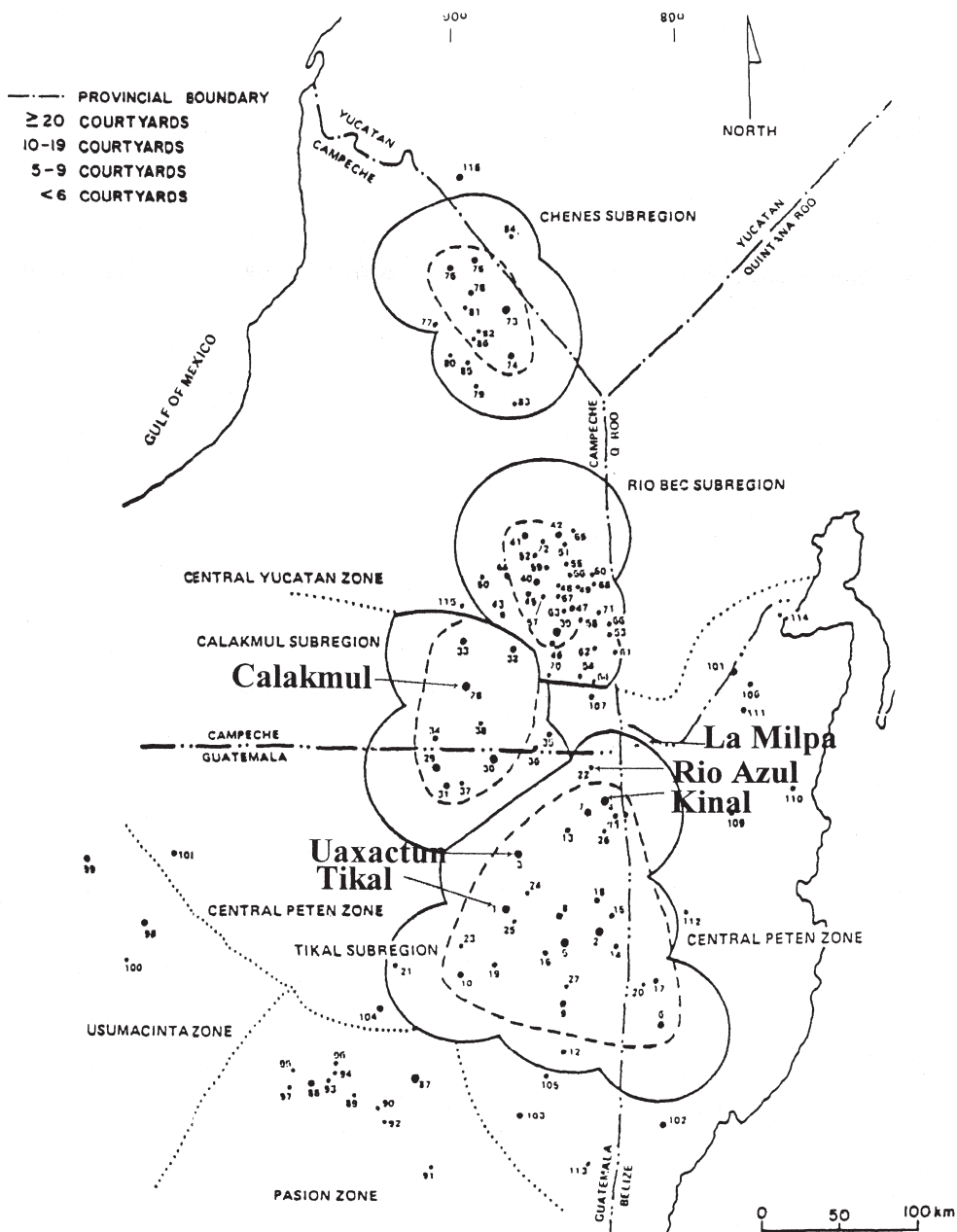
Fig. 5-11. Late Classic ball court at Copan, Honduras. An excellent example of the care and planning lavished on ball courts and an indication of their symbolic and possibly recreational importance to the Maya elite.

Reservoirs and Other Water Storage Devices

Water may not seem a vital concern for a people living in a tropical forest. However, because of the peculiar nature of the drainage of much of the Maya Lowlands, water impoundment becomes a necessity. Most of the peninsula of Yucatan is massive, porous, unbedded limestone with little topsoil. These conditions become exaggerated as one goes from south to north. North of Lake Peten Itza in Guatemala, there is little permanent groundwater in the form of lakes, ponds, or streams. Most of the heavy rainfall goes right through the soil, into the bedrock, and down to the water table. At Tikal this is at least 168 meters (550 feet) below ground level. In the northern part of the peninsula the water table is about 20 meters (70 feet) down. During the dry season of three to four months, the small rain catchments often dry up. Modern settlements, even small ones, suffer greatly because of this circumstance, and water often has to be brought from up to twenty miles away from the settlement. In the north, sinkholes, locally known as *cenotes*, give access to water all year round. Caves with permanent springs were used from earliest times, and remains of thousands of special jars have been found in them, broken while carrying water up to the surface.

Artificial means supplemented the sources in the north and south. In the north special types of *chultuns*, or underground storage chambers, bell shaped and plastered, were dug into the bedrock. *Chultuns* holding as much as 19,999 liters (5,000 gallons) of water have been found at Santa Rosa Xtampak (DeBloois 1970). Some are in use to this day. The one at Kabah has been refurbished and serves the small present-day community. In the south, with less access to groundwater, large reservoirs were favored. At Tikal it is estimated by Scarborough and G. Gallopín (1991) that the maximum capacity of all the reservoirs amounts to about 189,250 metric kiloliters (50 million gallons). The permanent population of Tikal is estimated at about sixty-two thousand people. This would mean that over a long dry period, 120 days, assuming a 10 percent evaporation loss, there would still be about 38 liters (8.3 gallons) per person per day, which is quite sufficient for both people and construction. These reservoirs at Tikal, as well as most other Maya sites such as Rio Azul, were filled partly from the drainage of the great areas of pavement tipped toward them. The runoff must have been extraordinary, judging by the rate at which the reexcavated camp reservoir filled. It was filled nearly to its present capacity of 11,000 kiloliters (3 million gallons) within 70 days after the rains began in 1958.

The matter of water becomes crucial in high-population situations. Impoundment of water means resource concentration in R. Carneiro's terms (1970) and, as has been noted, may be one of the stimuli to the evolution of high culture in a tropical forest zone. Assuming the eventual expansion of human population on the basis of optimum conditions and the conse-



Map 5-2. North central Peten, Guatemala, showing some major southern Lowland Maya sites and their relationships to the terrain and especially to swamps.

quent expansion beyond the support capacities of most natural means of water impoundment, artificial means would have been an absolute necessity at some time early in the Maya settlement of the lowlands. Later, as an elite class developed, the reservoirs and other water-storage devices may have become a means of social control (Scarborough 2003).

South of Lake Peten Itza and in certain other regions such as northern Belize and the southern corners of the lowlands, far fewer problems are involved in providing a dry-season water supply. Permanent lakes, large streams, and rivers are all dependable. Curiously, none of the largest sites are located in these favorable zones. Perhaps (and this is only a guess) the people with independent means of water and food supply were less amenable to submitting to social control if it were not necessary. This interpretation would fit with, although not confirm, the idea of water as a resource that was concentrated.

Regional and Architectural Variation

Stylistic variation is plentiful among the regions of the Maya Lowlands and among the cities (centers) themselves. These variations undoubtedly reflect in some manner the variations among local social systems and the relative importance of the individual sites. As will be seen, these regional styles, with their associated variations in symbols and decoration, roughly approximate territories of some of the regional states of the Classic period.

Let us consider the technical styles first. There are at least five major Classic architectural regions. These are indicated on map 5-2, with archetypal examples included. It will be noted that the Greater Peten style, characterized by extensive use of polychrome painted, modeled stucco decoration and an essential conservatism of conception in room dimensions, is the most widespread. The elaboration of relatively few themes and recombination of these architectural elements in a multitude of ways is characteristic of most Peten-style sites, including the outlying city of Coba in the north. Tikal, with its complexities of palace groups and jumbles of temples in groups, typifies this style.

Florid architectural decoration in the form of mosaic facades of carved stone is typical of the two north central styles, the Puuc and the Rio Bec-Chenes (figs. 5-12, 5-13). This ornamentation takes the place of and carries the iconographic messages of the modeled stucco in the Greater Peten group. The differentiation between Rio Bec and Chenes styles has been demonstrated to be invalid (Potter 1976). Chenes facades are typically low, one story high, but with the primary motif of the earth monster, with the central doorway ornamented as the mouth of the monster. Rio Bec buildings are typically ornamented with large towers that are nonfunctional temples; that is, the staircases are too steep for use and the dummy temples at the tops are solid masonry. However, there are suitable tomb chambers in the



Fig. 5-12. An apartment for an elite family at Becan, Campeche, Mexico. Structure 4 is a palace building with at least four stories of terraced apartments. The regional architectural style is called Chenes (Central Yucatan style group). The step is the nose of the sky god, flanked by wall panels of stylized (sky?) serpent faces. The apartments were originally roofed with stone vaults.

mass of the substructures, although no undisturbed grave has ever been found. These towered structures are contemporary with the Chenes style and, indeed, in sites such as Becan and Chicanna, face Chenes structures across plazas, forming what were undoubtedly functional units. Therefore, we shall combine these previously separated styles into one unit.

Puuc structures are baroquely decorated with rain-god masks and earth-monster facades. They are also characterized by alternation of the carved mosaic zones with severe or undecorated zones. Columns seem to set Puuc apart as well. Both the Rio Bec-Chenes and the Puuc styles are notable for their daring in architectural conception compared to the Greater Peten style (fig. 5-14). Rooms tend to be larger and higher, and the massiveness of the structures in general is notable. In other words, the monumentality typical of Maya civic buildings is emphasized in these regional styles, making them possibly the most imposing of Maya architectural groups. The sites of Uxmal, Kabah, and Labna are exemplary of this impressiveness (figs. 5-15, 5-16). Care in conception and execution of construction and carving is also typical of these northern styles (Pollock 1980). In contrast, Greater Peten



Fig. 5-13. A Chenes-style palace at Chicanna, Campeche, Mexico, excavated and stabilized by Jack D. Eaton. The center doorway is formed by the mouth of an enormous earth-monster mask. Monkeys and other creatures were originally depicted in the facade.

architecture often conceals construction faults under the heavy coatings of stucco and plaster.

The two other major style zones are the frontier regions of Maya Classic culture, the Southwestern and the Southeastern. The former is epitomized at the site of Palenque (figs. 5-17, 5-18). The use of physical isolation as a means of emphasizing a building as well as delicacy of stucco ornamentation set this site and associated centers apart from the rest of the Maya area. Certain features, such as the mansard-style roofs and inner shrines, also distinguish Palenque buildings. Copan is the prototypical site for the Southeastern-style unit, although what remains of Quirigua is similar. The emphasis seems to be on the temple form and on architectural sculpture nearly in the round, which covers the facades and sides of the buildings. The general emphasis on three-dimensional forms in Copan sculpture is notable, even in the stelae.

Although it has been argued otherwise, it seems quite clear that all of these regional styles are essentially contemporary, and especially during the eighth century A.D. We are not so certain about the Early Classic styles



Fig. 5-14. Chichen Itza, Yucatan, Mexico. The round superstructure with a spiral interior staircase is thought to have been an observatory. Its style is Puuc, equivalent to very Late Classic. Human heads sculpted of stone rim the platforms, suggesting that the building fulfilled another function in addition to stargazing.

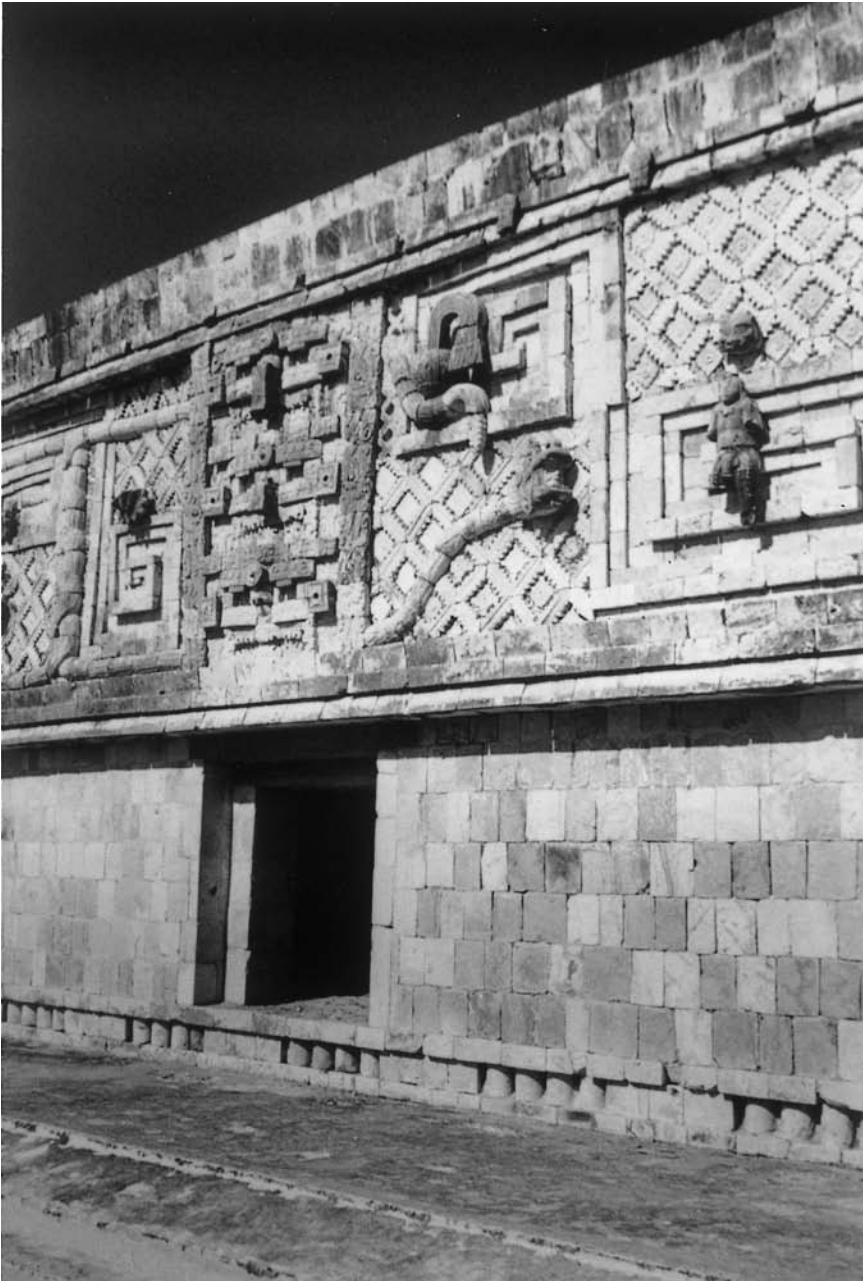


Fig. 5-15. Palace mosaic detail, Uxmal, Yucatan, Mexico. (Courtesy William R. Coe III)

other than the Greater Peten group, since less work has been done to reveal the prototypes of the other regional styles. However, at Palenque and Copan it appears that the styles are essentially Late Classic and are the results of generally late cultural florescences in these zones. Rio Bec–Chenes and Puuc fashions appear to go back to the end of the Early Classic.

Maya Communities and Political Structure

The disputes about the nature of Maya urbanism and especially about the nature of Classic political units have assumed the ferocity of medieval religious wars. I shall attempt to avoid invidious statements in this section and present a balanced picture of the evidence and most probable interpretations.

First, thanks to the work of R. Matheny and Richard Hansen, it is indisputable that by 200 B.C., in the Late Formative, the Maya had developed urban centers (Nakbe, Mirador and others), and that these large and small cities became ever more complex through the seven hundred years of the Classic. Examples already mentioned include Tikal, Calakmul, Coba, and Edzna.

It is possible to rank Maya cities by size and achieve an idea of their relative importance in the Late Classic. One ranking method is by counting the courtyards of major architecture in a city (R. E. W. Adams 1981). Tikal has eighty-five courtyards of architecture (map 5-3). Calakmul, on the basis of recent mapping, weighs in at about fifty courtyards. These are the largest Maya centers known, and both are estimated to have had large populations as well; more than fifty thousand each in the eighth century A.D. On the next level of size are sites of about forty courtyards, such as Naranjo and Rio Azul. On the next level of size are sites of twenty to thirty courtyards, such as Uaxactun, Palenque, Copan, Yaxchilan, and a number of others.

Certain patterns emerge from the examination of maps for relative locations and distances. Tikal and Calakmul are about 100 kilometers (60 miles) apart. Each is surrounded by a number of smaller cities, ranging down to sites that only have one courtyard of formal architecture. Further, there are some striking features of the Calakmul and Tikal zones, such as the buffer zone between them, which is at least 20 kilometers wide and 80 kilometers long (about 12.5 by 50 miles), in which no urban centers are to be found (R. E. W. Adams and Jones 1981, fig. 5.1). It seems highly likely that places such as Uaxactun, at twenty-one courtyards, 19 kilometers (12 miles) distant from Tikal, were subordinate to the latter city, which is four times as large. If one calculates the distance that can be covered on foot or in canoe in the lowlands, it comes to about forty kilometers (25 miles) per day. Using this figure to draw boundaries around the largest cities and their subordinates, one arrives at a map with the Maya Lowlands divided into groups of cities, towns, villages, hamlets, and farmsteads that appear to have been regional states. In this scheme Tikal would have been



Fig. 5-16. Sculpted frieze of skulls, crossbones, and the Yucatec variant of Maya hieroglyphic writing, Uxmal. Uxmal and the Puuc show many more links with other Mesoamerican cultures than do Maya sites to the south.

the capital of a regional state that bordered on the Calakmul regional state, with a buffer zone between them. With some adjustments for topography, it can be calculated that during the Late Classic, and probably the Early Classic as well, much of the Maya Lowlands were divided into about eight regional political units (map 5-4). The other zones were dominated by fractionated city-states such as in the Rio Bec region. At times these cities may have been incorporated into the larger states. Folan thinks there is evidence that Calakmul controlled many or all of the Rio Bec cities at one or more periods.

The major alternative that is now considered feasible is what may be termed the city-state model. It is based primarily on the data from decipherment of Maya texts. As will be seen in the section on writing, it is certain that the Maya wrote down names that are associated with specific cities. What is not certain is what these names mean. Are they names of places, territories (states), ruling dynasties, lineages, or rulers? All of these were considered possibilities by the discoverer of the emblem glyphs, and the question is not yet answered (Berlin 1958). At any rate epigraphers are now generally in agreement that the distribution of one variety of the so-called "emblem glyphs" reflects the size of Classic political units. In addition these scholars, mainly art historians and epigraphers, assume that Maya warfare was largely

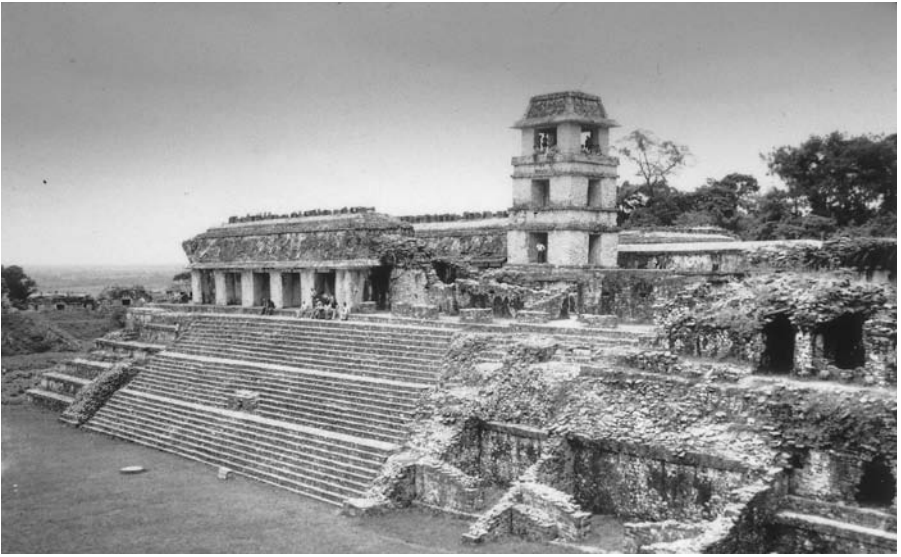
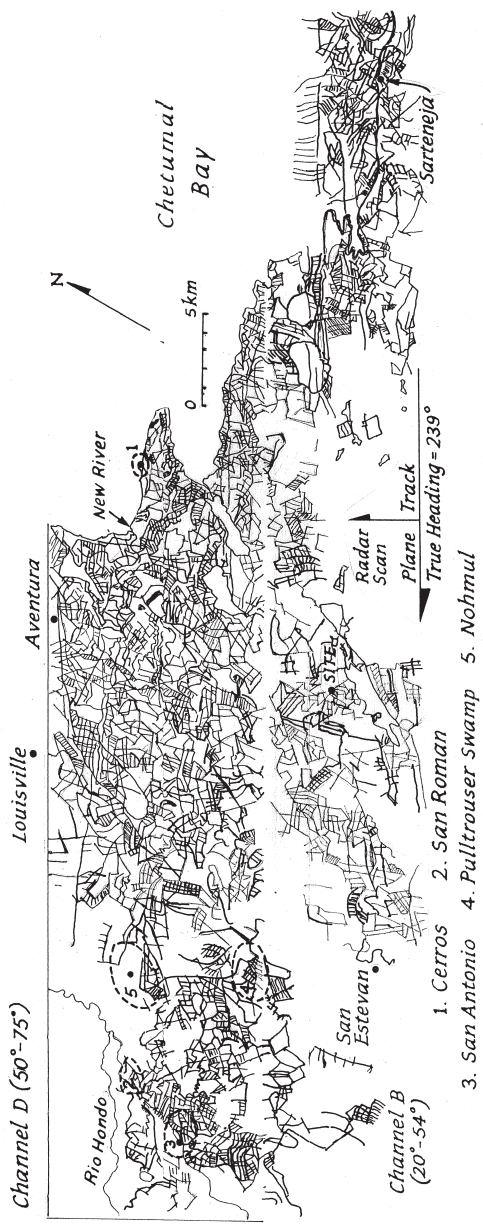


Fig. 5-17. Palace at Palenque, Chiapas, Mexico, probably largely built by Pacal, father of Chan-Bahlum and the greatest of Palenque's rulers. The roof on the tower is a modern reconstruction.



Fig. 5-18. Temple of the Sun and probably the resting place of one of Palenque's Late Classic rulers, Palenque, Chiapas, Mexico. The sculpture in this building shows the accession of Chan-Bahlum to power at Palenque about A.D. 683, according to L. Schele.



Map 5-3. Overlay drawings made from radar imagery of northern Belize. Indications of zones of raised fields are shown by lattice patterns. Radar imagery is indiscriminate and also shows many other features, such as smugglers' airstrips, hurricane swales, and modern roads.



Map 5-4. Rio Azul, Peten, Guatemala. An Early Classic city in the southern Maya Lowlands, thought to have been a part of the regional state whose capital was at Tikal, about 45 kilometers (28 miles) to the southwest. Approximately 7,500 people lived in the city in the fifth century A.D.



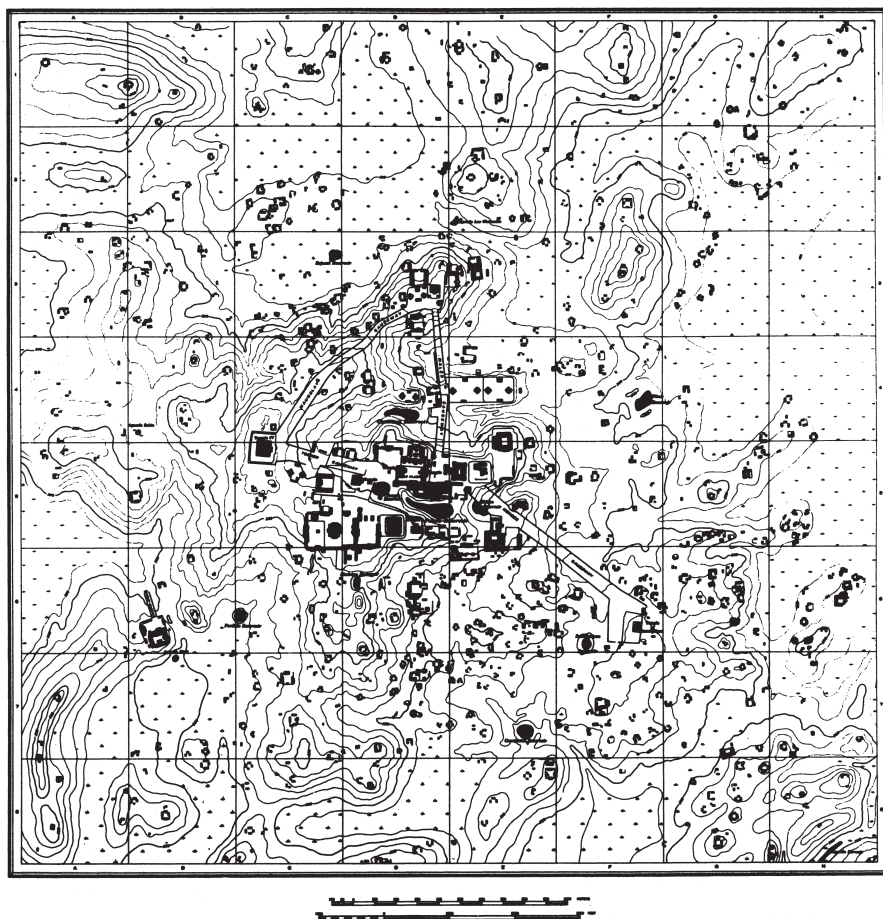
ritual and ceremonial and not for territorial conquest (Schele and Miller 1986). Given these assumptions, it is easy to reach the conclusion that the Maya were organized into small political units defined by territory that averaged about 25 kilometers (16 miles) around each major city. Very occasionally and later, larger political units were formed (Mathews and Willey 1991), but these were rare events.

A number of objections can be raised against the city-state model, two of which are that it is dependent on specific and unusual interpretations of the function of Maya art and that it depends on a questionable set of assumptions about the meaning of emblem glyphs. The most serious and fatal flaw in the argument is that it almost completely ignores the weight of field archaeological data against it. This information is not only the ranking of cities by size, their distributions, and associated patterns, but also the patterning of artifact distributions and of architectural styles and other evidence in the epigraphy. For example, tomb murals and other art at Rio Azul, 45 kilometers (28 miles) northeast of Tikal, indicate that Rio Azul's fifth-century governor was the son of Tikal's ruler. T. P. Culbert points out a number of other objections (1991b), which indicate that a great number of widespread cities engaged in coordinated activities during the Late Classic. Further, he makes the point that Tikal, with a population in the immediate area of 362,000 (math error in Culbert et al., 1990, corrected here) would be unlikely to be able to govern itself with the rather slim political mechanisms characteristic of city-states. Joyce Marcus's studies of the Calakmul and other texts (1973, 1987, 2003) also show patterns that do not fit with the city-state model. Finally, the nature of Maya fortifications and the implied extensive patterns of warfare correlate very poorly with the smaller political model. Epigraphers Simon Martin and Nikolai Grube (2000) came to largely the same conclusions after some reassessment of the various data.

At this point in Maya research, it appears to this author that the evidence is heavily in favor of the development of regional states in the Central Lowlands by the beginning of the Classic period, with the large regional state of the Mirador Basin having preceded all in the Late Formative (Hansen in press). The Puuc area seems to have blossomed later, between 750 and 1000 A.D., and Uxmal became the regional capital for a brief space of time (Dunning 1992). Before A.D. the zone appears to have been politically fragmented among various cities and centers.

Variation in Maya Cities

Maya cities varied in composition, pattern, and function. A place such as Tikal, probably a capital, had all of the known functions described in the preceding section. It was a very large and complex place. Similarly, Coba, apparently the capital of its region as well, was very complex, but it also



Map 5-5. The central zone of Tikal, Guatemala. Most of the city's major buildings now visible are from the Late Classic. Exceptions are the "Lost World" group and the North Acropolis. The city is defended on the north and south by dry moats and parapets and is estimated by Culbert et al. (1990) to have had a population of sixty-two thousand in the eighth century A.D.

seems to have been zoned in a concentric manner (Folan, Kintz, and Fletcher 1983). The Coba *sachés* run to important groups within the city, which may have been administrative centers for segments (barrios). On the next level of size and complexity, a site such as Rio Azul (map 5-5) seems to have had a set of special functions, which were military, political, and economic. The city was likely fortified, inhabited by a set of noble families who had military duties, and was located on the frontier of Tikal's regional state. Its location on the river that gives the site its name also

allowed for rainy-season canoe traffic, ultimately to the Caribbean. The permanent population in Early Classic times seems to have been not more than fifty-five hundred, which appears to be far too low for the construction of the site. We can only assume that the construction crews were imported. Still smaller sites in the same zone, such as Uaxactun, probably were administrative centers under a local elite reporting to the rulers at Tikal. Dropping to the smallest of centers, such as Uolantun, W. Haviland (1977) has demonstrated that the site was probably a residence for an exiled member of the ruling group.

In the Rio Bec region medium-sized administrative centers are surrounded by palace residences in the countryside. The latter seem to have been rural "manor-houses" for the local elite. A similar pattern seems to have obtained in the Puuc Hills region of Yucatan before A.D. 750, with the site of Oxkintok dominating its zone and, after A.D. 750, with Uxmal the capital of a vigorous and aggressive regional state (Dunning 1992; López de la Rosa and Velazquez Morlet 1992). Sites such as Xculoc and Sayil appear to have been enlarged examples of noble country estates, with much gardening going on in the inhabited zones.

Farther south, on the Usumacinta River, located within a horseshoe bend, Yaxchilan is probably a fortified site, with the remnants of a bridge that led to the north side. Radar data indicate that the north bank was probably the zone of raised fields (R. E. W. Adams, Brown, and Culbert 1981). The city was likely a regional capital, dominating sites such as Bonampak, with its famous murals, and Piedras Negras, downstream. In spite of considerable and prolonged work at the site by Mexican archaeologists, very little new data have been published on much beyond its sculpture and some formal architecture. It is probable that the city was of considerable size and population.

The site of Palenque, on the southwestern corner of the Maya Lowlands, has always seemed anomalous. It is a treasure house of Classic Maya art in the form of sculpture, modeled stucco, and even painting. A great deal of restoration archaeology has been done at the site, as well as very intensive studies of the art and epigraphy. Recent mapping by Edwin Barnhart (2001) now permits a more accurate courtyard count; there are about eighteen. It is clear that Palenque was the dominant and capital city of its region. It is, *par excellence*, a Maya city of a mainly resident elite, supported by a mainly rural population dispersed through the surrounding hills and the coastal plain. Isolated as it was, it seems to have gone its own way in cultural evolution from about the sixth century onward and to have assumed some peculiar characteristics. It was not greatly pressured by surrounding, more powerful states and cities, except for the hillside city of Tonina of about the same size. Therefore Palenque's apparent city-state development should not be taken as a model for Maya political structure as a whole.

Copan, on the southeastern corner of the lowlands, was similarly isolated and is also relatively small, but it also has an enormous amount of sculptured art. The site dominated its small region, and in its isolation developed some features that appear to be unique. Among these are country residences, linked to the central core of the city by *saches*. These isolated palace establishments are themselves embellished with sculptural emblems of family and dynasty that link them to temples and palaces in Copan. Again, as in the case of Palenque, much of the population seems to have been dispersed through the rural valley, achieving about twenty-five thousand only at the peak of the Late Classic (Webster 1985). In both Palenque and Copan, the excess of symbolic art everywhere one looks is perhaps related to the fact that these are, in the end, provincial centers and provincial elites. It may be that these isolated noble families felt the need to be more Maya than anyone else, somewhat as the British in India emphasized their English characteristics to set themselves apart.

Immense amounts of well-published work have been done at Copan and have revealed great treasures in the form of tombs, Early Classic temples heavily decorated with stucco, and many boastful texts. A convincing case has been made that the founder of the Copan dynasty came from Tikal in approximately A.D. 426 or 427, undoubtedly displacing another line of rulers (Sharer 2003; Stuart 2004). The same person, Copan Ruler 1, also sponsored the establishment of a new dynastic line at the smaller, intervening center of Quirigua in the same year (C. Jones and Sharer 1980; S. Martin and Grube 2000).

We should also mention special-function sites such as the ports of entry/burial islands of Isla Jaina and Isla Piedras, off the coast of Campeche. Here, especially in the Late Classic, the distinguished and perhaps even the less socially prominent were buried with special ritual and mortuary figurines. These figurines may represent scenes from the lives of the persons buried with them. They have been highly prized for years by the rapacious collectors of pre-Columbian art because of their naturalistic style.

Depictive Media and Communication Systems

The Sacred Almanac. Two major calendrical cycles governed the lives of Mesoamericans. These are analogous in operation to our weeks and months, which are solar and lunar calendars that we use simultaneously. One cycle, seeming to be more ancient than the other, was a sacred almanac consisting of 260 days. Twenty named days were combined with thirteen numbers, with the various permutations of number-day name combinations rotating until they began to repeat after 260 days. Sylvanus Morley's (1946) analogy of two unequal gear wheels meshing with one another is probably the clearest analogy to the operation of this cycle. The day names are specific to each region but overlap in meaning. The Maya 260-day round is called

the Tzolkin by Maya scholars, but we do not know what the Maya called it. Each day was symbolized by some concept; for example, the second day was Ik, or "Wind."

As noted elsewhere, the sacred almanac had great ritual significance for all members of Mesoamerican society. Divination was and still is carried out by means of the omens and gods associated with any particular one of the 260 possibilities, and a person's fate was more or less determined by the circumstance of birthday. The days were conceived of as having lives of their own in the sense that they were divine (J. E. S. Thompson 1950). The Maya seem to have carried this conception of time to its utmost refinement, using the metaphor of the god of the day carrying the day as a load. Religious festivals falling according to days of the sacred almanac were called "movable feasts" by the early chroniclers, who made the analogy between these native celebrations and the Christian Easter, which also shifts within the astronomical year.

The sacred almanac proved to be the most durable of all calendrical systems in Mesoamerica and is still in use today in many parts. Around Nebaj, in northern Guatemala, for example, J. S. Lincoln and B. N. Colby (Colby and van den Berghe 1969) recorded the modern version of the almanac and its use in divination. It has been observed that the period of human gestation is about 260 days, and it is possible that this is the origin of the sacred almanac.

The Astronomical Year. The use of the 365-day year was equally widespread among Mesoamericans at the time of the Spanish Conquest. This calendar was an approximation of the "tropical" or astronomical year and was a sun calendar similar to our own. The mathematical arrangements were in the form of 18 named months with 20 numbered days in each; $18 \times 20 = 360$, and therefore with a short 5-day period added on to the end of each year to to produce 365. A day in the tropical year was designated by means of its number and month name.

The Fifty-Two-Year Cycle. Obviously, both the systems outlined above can be and were combined. Thus, a particular day among the Maya could be 4 Ahau (sacred almanac) or 8 Cumku (astronomical year). Since these cycles are mathematically indivisible (260 will not divide into 365), the repetition of any particular combination will only come after the multiplied sum of days: 260 almanac days $\times$ 365 astronomical days, or 18,980 days, or approximately 52 years.

All of the above interrelated calendrical systems probably date back into the Formative period, and all may be a legacy of the Late Formative cultures. However, when we proceed to more complex calendrical permutations, we apparently leave behind all but the Lowland Maya.

Maya Mathematics, the Long Count, and Supplementary Elaborations

It seems likely that the Classic Maya and certain other Late Formative groups were the only cultures to use an exceedingly accurate system of counting time called the long count. The day was the basic unit of the long count as it was of the sacred almanac; in fact, the latter was incorporated into the former. An infinite count of days is achieved by the long count. The structure of Maya mathematics is vigesimal, or a progression by 20s, but it was modified at times so as to be able to handle natural cycles. At the calendrical third order of vigesimal progression, the Maya went to a multiplier of 18 instead of 20 in order to achieve a unit of 360 instead of 400. The 360 unit was desired because of its approximation of tropical year length and its correspondence to the astronomical life cycle. Positional notation is also a feature as well as the use of a bar for 5 and a dot for 1. Finally, the concept of zero, or completion, was used as a necessary part of the system.

One day was expressed by the lowest dot (1×1). The Classic Maya wrote their numbers vertically, so a dot in the next higher place represented 20 (1×20). The third and highest dot indicated 1 unit of 360 (1×360). Say that the figure desired was 1821. In that case it would be written similarly, except that the third and highest unit would be a bar representing 1800 (5×360), for a total of $1 + 20 + 1800 = 1821$.

An excellent book written by a mathematics teacher, George Sanchez, deals with how the Maya probably handled numbers of all kinds, including fractions and uneven numbers. Sanchez concludes that their system was extremely flexible (Sanchez 1961; see also Anderson 1971).

The long count consists of a hierarchy of units which are progressively larger according to the vigesimal system with the modification noted above. Thus we have the following:

- 1 kin = 1 day
- 1 uinal = 20 days
- 1 tun = 360 days
- 1 katun = 7200 days (about 20 years)
- 1 baktun = 144,000 days (about 400 years)

Special glyphs were developed to designate the various units. As usual, there is a bewilderment of variation, the nature and reasons for which are beyond the scope of this book. For these and related matters, see Joyce Marcus's excellent treatment in her *Mesoamerican Writing Systems* (1992). Higher orders of time units were probably in use, but most Maya inscriptions begin with the *baktun* number. The Maya began their count with a mythologically determined date of 3113 B.C., and most of their calculations fall within the 9th *baktun*, although dates exist from both the 8th, and 10th

baktuns. There are a few 7th-*baktun* dates, and these indicate that the bar-and-dot system was in use in the old Olmec zone as well as the Izapa and Kaminaljuyu regions earlier than in the Maya Lowlands. Tres Zapotes Stela C, dated at 31 B.C., is one of the earliest of these 7th-*baktun* monuments. In fact, no *baktun* 7 texts come from the Maya Lowlands except possibly an altar at Polol in the southern part.

Archaeologists have developed a convention for writing Maya dates in western script. The notation 9.16.3.0.0 means 9 *baktuns*, 16 *katuns*, 3 *tuns*, 0 *uinals*, 0 *kins*. The Maya recorded this date to mean that this amount of time had passed since their zero date (creation?), equivalent to 3113 B.C.

The correlation of the Maya calendar has generated almost as much heat among epigraphers as transubstantiation once did among theologians. With the massive confirmation of radiocarbon dates from Tikal and reinforcement from other projects since 1972, it now appears that the Martínez (Thompson) correlation is correct (Satterthwaite and Ralph 1960). Martínez was a Yucatec scholar, who, unfortunately, died before receiving adequate recognition for his achievement. This is the correlation that leads to the long-count starting date noted above.

A lunar calendar and a Venus count were also kept. The former was calculated by the Mesoamericans at about 29.50 days and adjusted by judicious alternation of 29- and 30-day moon months. The modern astronomical measurement of the moon's cycle is 29.53059+ days. The ancient value for the cycle of Venus was very close to the modern measurement of 583.920 days.

Writing Systems

The art of writing was developed in the Maya Lowlands beyond anything achieved elsewhere in Mesoamerica (figs. 5-19, 5-20, 5-21). It became a true writing system in the sense that it had the capacity to carry a message without the aid of oral explanation or exegesis. Until 1958 nearly all glyphs to which meaning had been assigned were *deciphered*. That is, they were concoctions of pictorial elements for which *meaning* had been defined. *Translation*, the rendering of the glyphs into a Maya linguistic equivalent, was exceedingly rare. It was thought by most scholars that the undeciphered glyphs were mostly additional information about the calendar, mathematical permutations, mythological references, liturgical notations, and the like. Even mnemonic functions were thought to be part of the ancient writing. Texts occurring on pottery vessels were considered as purely decorative (see J. E. S. Thompson's 1950 book, *Maya Hieroglyphic Writing: An Introduction*). All of this has changed drastically, and most of these notions have been discarded.

It is now clear that Maya writing served various purposes dictated by society and its directing elite. These purposes were to record genealogical

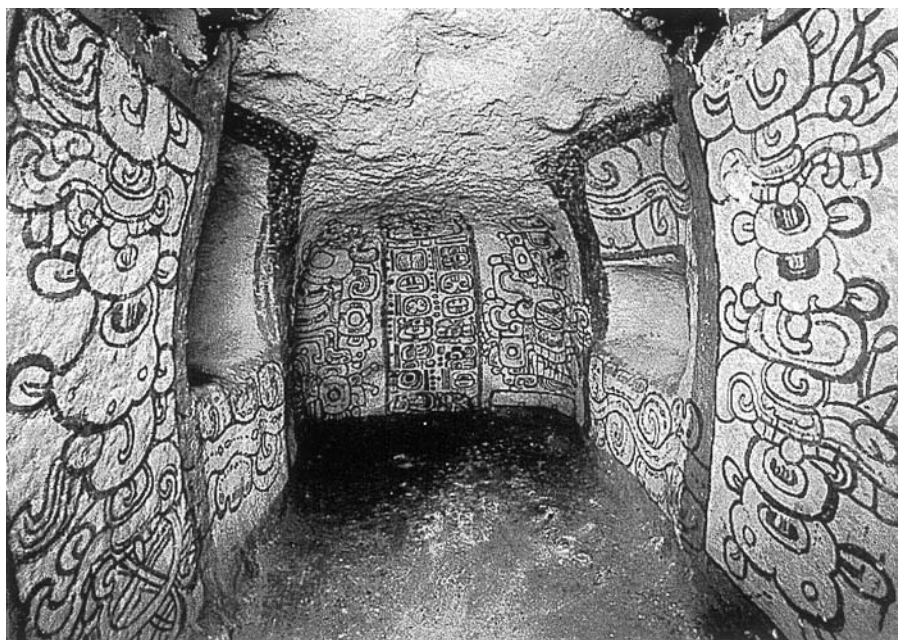


Fig. 5–19. Murals from Tomb 1, Str. C-1, Rio Azul, Guatemala. The hieroglyphic text says that A.D. 417 was the birth date of a ruler whom we know as “Governor X.” The left-hand panel shows the coats of arms of his parents, the rulers of Tikal. The right-hand panel shows the coat of arms of his grandfather, the Tikal ruler, “Curl Nose,” and makes a claim of descent from the sun god. All these Maya rulers were linked with Teotihuacan. Although Tomb 1 has been looted, its paintings still provide considerable data.

information about the aristocratic families, the rulers, historical events, dynastic affairs, and marriages and to place them in the context of the unending cycles of time (fig. 5-22). The true nature of the script became apparent through a series of insights and studies carried out during the 1950s and 1960s. Yuri Knorozov attacked the script through a phonetic approach (1958). Although he made a number of valid observations and decipherments, these were so hidden in a mass of mistaken assumptions and diversionary errors that the main body of his work was rejected. The major break into the script came first with the discovery by Heinrich Berlin (1958) that there were specially configured glyphs associated with particular sites. Although Berlin was not sure whether these were rulers’ names, place-names, or something else, it became apparent that historical information might be contained in the texts. The truly revolutionary papers of Tatiana Proskouriakoff (1960, 1963, 1964, et passim) demonstrated that rulers’ lives were outlined on the carved texts and that these schematic biographies included birthdays, dates of accession to power, notations of conquests of

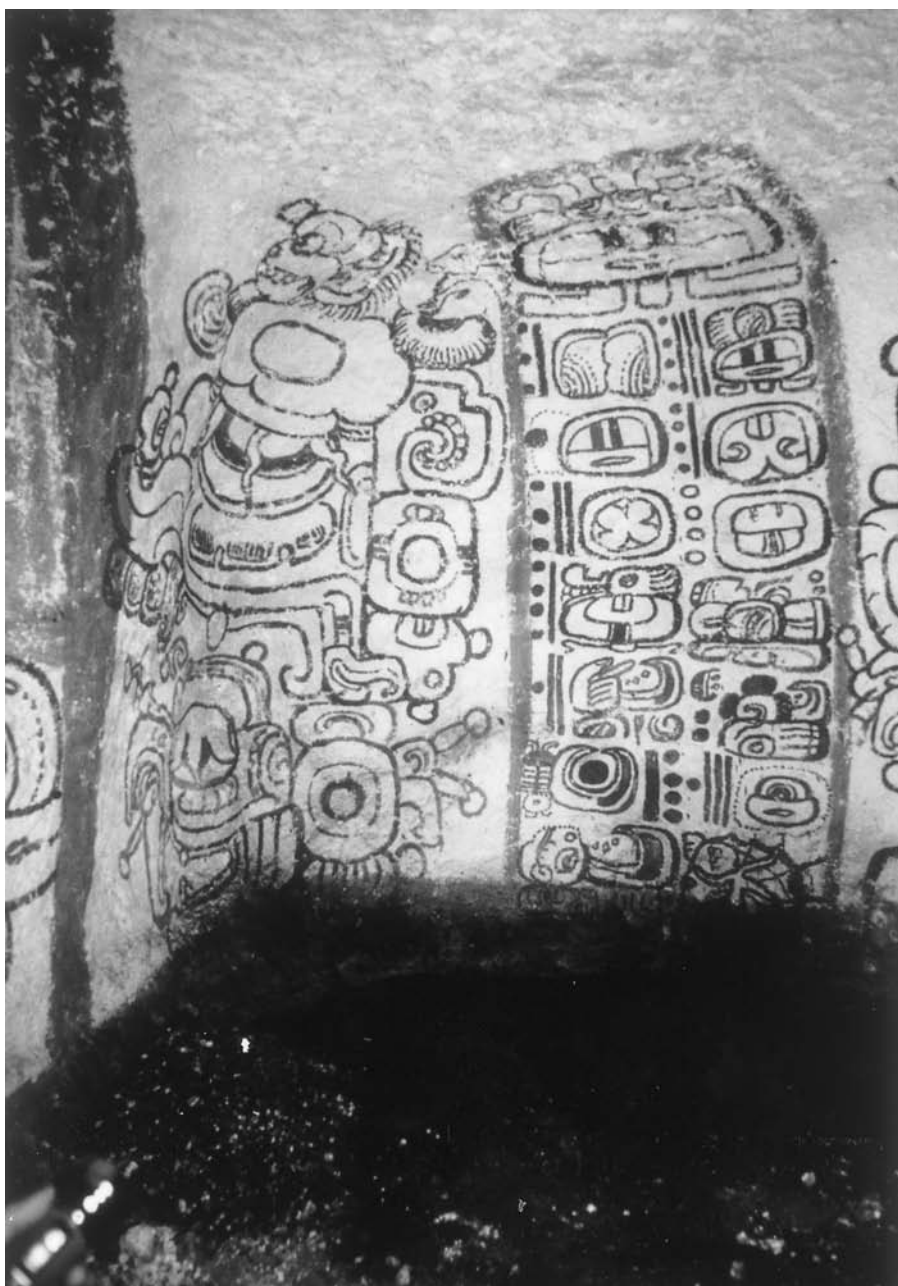


Fig. 5-20. Detail, murals, Tomb 1, Rio Azul.

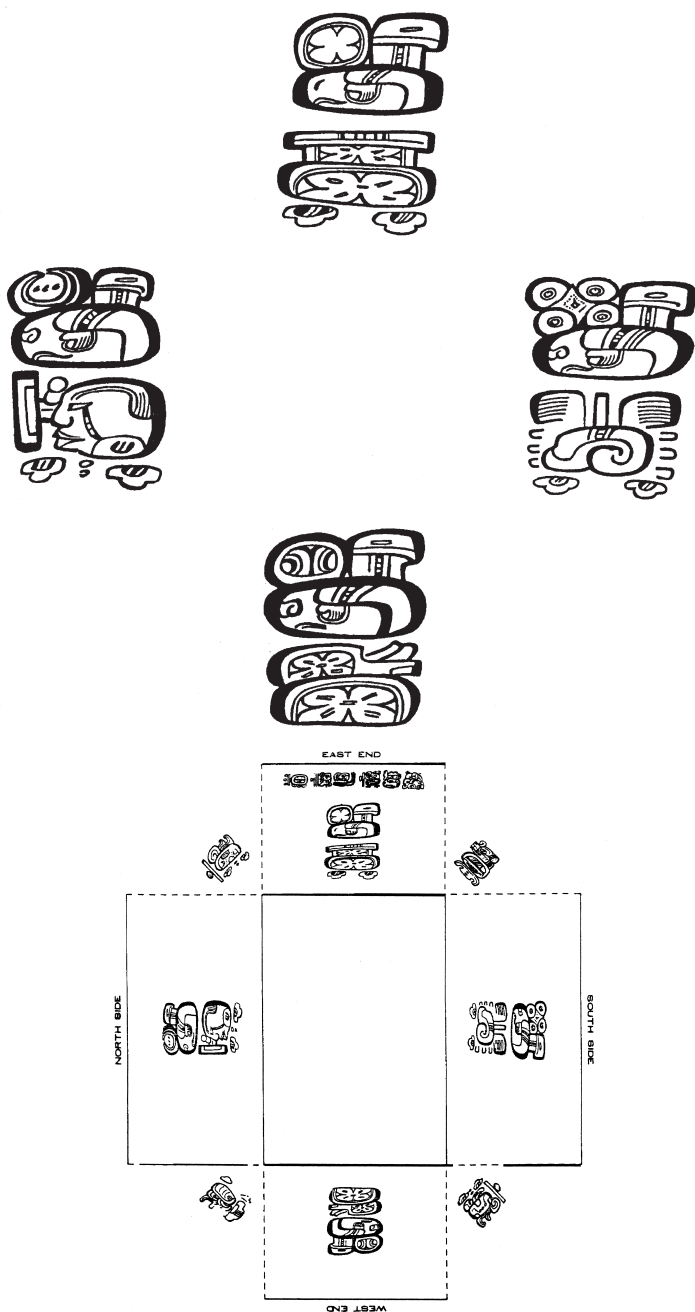


Fig. 5-21. Details, a mural from Tomb 12, Rio Azul, Guatemala (above). The large glyphs, which indicate the cardinal directions, were painted on the appropriate walls of the tomb (below). The text indicates that a person named "Six Sky" was buried in the tomb about A.D. 449, in the Early Classic period. (Glyph drawings by David Stuart, tomb layout by Grant D. Hall)

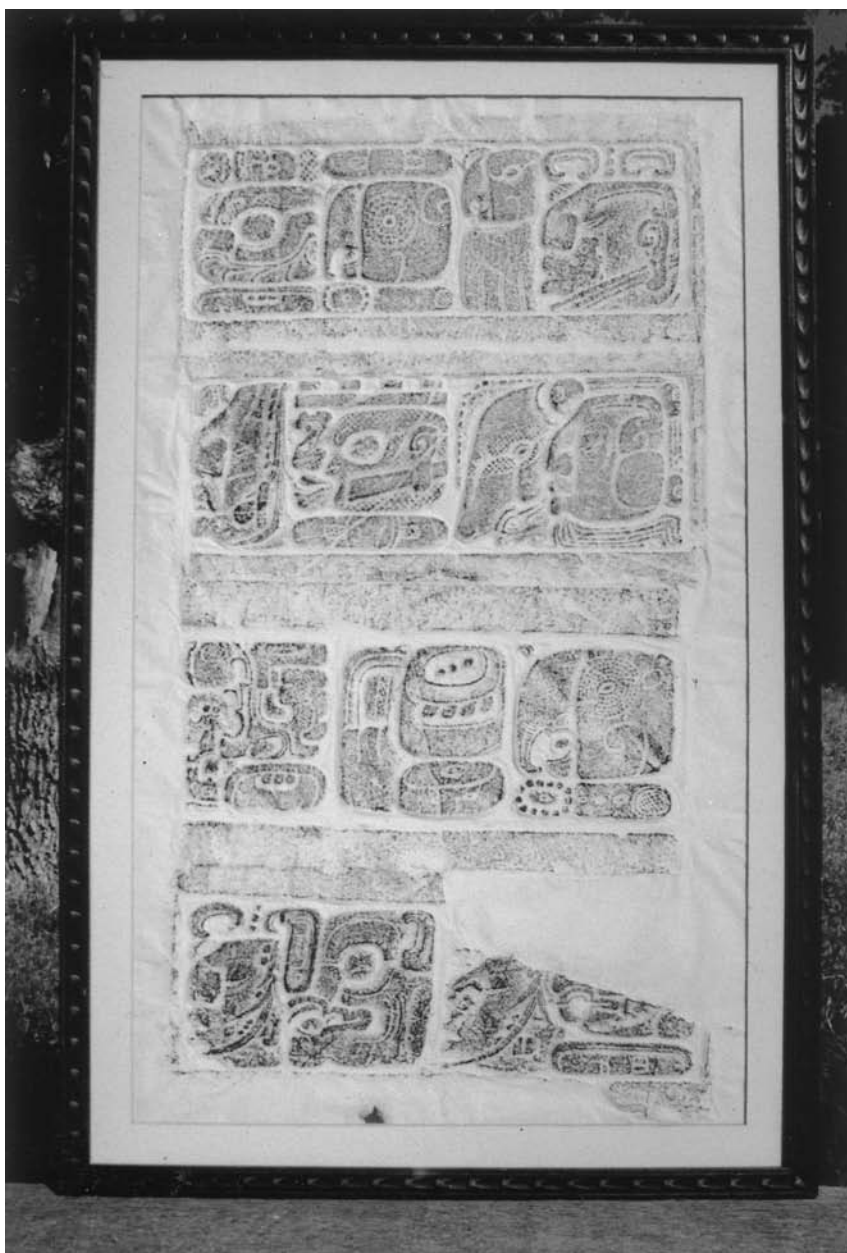


Fig. 5-22. Rice-paper rubbing of Late Classic glyph blocks from a palace at the medium-sized city of Machaquila, Peten, Guatemala. The glyphs are not in their original order, but they seem to refer to noble individuals and their personal names.

other rulers, marriages, and similar data. These decipherments were rapidly followed by those of other scholars such as David H. Kelley (1962; see also 1976), who demonstrated the existence of a dynastic sequence in the texts of Quirigua. Linguists took a hand in the game, and F. G. Lounsbury (1973) made a decipherment of a title that read "*ah po*," "lord." This was later changed to read "*ahau*," with the same meaning. In either case, it was apparent that Maya script did have phonetic values. A measure of the progress made since then is a masterly summary and study by Victoria Bricker, *A Grammar of Maya Hieroglyphs* (1986).

The changes in perspective on Maya hieroglyphs have been profound. As now known, the nature of the script is that it is both logographic and phonetic. A logogram is a unit of meaning in a given language equivalent to the linguists' morpheme. An example from English is "-ing," as in "hunt-ing." Maya morphemes usually occur in a consonant/vowel/consonant pattern, such as *bah*. This is a clue to pronunciation but not to precise meaning, because the Maya also used a rebus principle. Therefore, *bah* may mean "pocket gopher" but also may mean "to pierce, perforate, puncture," and so forth (Bricker 1986). Maya script reflects the structure of Maya languages, mainly of the ancient forms of Chol and Yucatec. Linda Schele, in her studies of verbs (1982), indicates that the basic word order for clauses was usually verb-object-subject and verb-subject. Inflectional studies by Bricker (1986) demonstrate the highly technical means of determining meaning through restricting the possibilities.

Colonial and modern Maya texts seem to show certain repetitive patterns in their use of language. Parallelism expressed in couplets is one example. The Maya might say "There was then no sickness; they had then no aching bones." Another frequent feature is that of punning, which, on a written level, becomes rebus. An example of this is the use of a fish head for the word *xoc*, meaning a mythical fish, perhaps a shark, but also "to count." As in any language, metaphor looms large in describing the world within which it exists. As has been noted, the Maya had a concept of periods of time as burdens. The ancient script reflects these patterns as well as the structural differences between Chol and Yucatec, which were the two major languages expressed in writing (J. E. S. Thompson 1950; Bricker 1986).

All of the above is highly technical, abstruse, and increasingly inaccessible to the nonspecialist. However, it is worth the effort to understand the writing system's general features, because it provides an insider's view of Classic Maya civilization. While much of what we now gain from decipherments remains enigmatic, a great deal can be checked against the patterns of information from field archaeology. Only by a combination of continual checking of one against the other can any substantial and trustworthy understanding be assured.

The Content of Maya Script

For a student or a field archaeologist, the major interest of deciphered texts is the body of insights that they give us on the nature of ancient cultural institutions. The texts form something of a commentary or exegesis on a reconstructed event or pattern. For example, in the case of a highly complex scene on a pottery vessel known as the Altar Vase, the vessel was found in a burial (figs. 5-23, 5-24). The date of A.D. 754 (actually 9.16.3.0.0) is given on the pot, and the six human figures that are in the scene are identified. Only in the archaeological context of stratigraphy, ceramic analysis, and other data is a full understanding of the scene possible. In this case the combination of data indicates that the painted record is one of a funeral for a middle-aged woman who died at Altar de Sacrificios in A.D. 754. Funeral ceremonies were attended by relatives who came from Tikal, Yaxchilan, and the northern highlands of Guatemala. In the case of Yaxchilan, its ruler was probably present. A young woman was sacrificed and buried near the tomb of the older woman. Both graves were covered by a memorial temple on which was placed a carved monument (R. E. W. Adams 1971).

There is a great deal more information obtained from this burial, but the point has been made that texts without archaeology are incomplete. The implications here are of a tightly related set of ruling families from important cities (Tikal and Yaxchilan) and a relatively unimportant city (Altar de Sacrificios). This gives something of an idea of the nature of Maya political structure that can be tested against other information. Another point to be made is that the Altar Vase, if it had been found by looters and sold into the New York art market, would be just another pretty vase. It would have lost about 90 percent of the information that came with it because of the careful excavation. Unfortunately, a great deal of interpretation of Maya art and hieroglyphs has been based on illegally excavated ceramics, at least some of which are falsifications.

At Rio Azul a tomb was found that contained a highly unusual ceramic piece (fig. 5-25). David Stuart later deciphered the text on its top as saying that it was meant for the purpose of containing two kinds of chocolate drink (Hall et al. 1989). The decipherment was confirmed by Hershey Food Laboratories, which found that the powdery residue inside the pot was the remains of cacao. The pot also had another text, which Stuart read to mean that it belonged to a counselor of a prince ("an heir to power"). Indeed, the person to whom it had belonged had been buried along side the ruler whom he served. Once more, the combination of decipherment in the context of carefully gathered field archaeology produced results more telling than those that either epigraphy or archaeology alone could have achieved. A great deal of combined field archaeology and epigraphy has been done for Copan, bringing great benefits to the culture history of the site as well as insights into the nature of Maya social and political institutions.

Fig. 5-23. The Altar Vase (from Altar de Sacrificios, Peten, Guatemala), dating A.D. 754, depicts a funeral ceremony for a middle-aged noble woman. Among those attending were Bird Jaguar II of Yaxchilan, who is shown here dancing. Also present but not shown here were the younger brother of Ruler B of Tikal and a young female relative who was sacrificed in the ceremony and accompanied the older woman into the afterworld. (Courtesy Richardo Mata)



Fig. 5-24. Hieroglyphic captions from the Altar Vase (fig. 5-23). The vertical row is associated with a nobleman from Tikal, and the text ends with the Tikal emblem glyph.





Fig. 5-25. A pot for chocolate from Tomb 19, Structure C-1, Rio Azul. According to David Stuart, the texts on the pot indicate that it belonged to a counselor to "Governor X" and that it was meant to hold chocolate. Analysis by Hershey Food Corporation scientists of the contents of the pot confirmed that it had indeed held chocolate (cacao).

The future of the decipherment of Maya texts seems promising. Linguistically trained epigraphers are now in a position not only to extract the general meanings of the glyphs, but also to translate them individually and in the form of whole texts. The dangers are that epigraphers will attempt to do without the contextual data from excavations and other field studies and that Maya studies might fall into epigraphically driven field research, to its great detriment. Such a development held back Classical archaeology for many years. There is far too much uncertainty in many of the translations thrust upon us. The scholarly landscape is littered with discarded translations of “names” of rulers. For example, Tikal’s Ruler A (Ruler 26) has also been known as Ah Cacau, Hasaw, and, at present (2004), Jasaw Chan Ka’wiil II. Therefore, I have, in the main, chosen to call Maya rulers by their nicknames (e.g., Curl Nose) or by their place in the dynasty—in this case, Ruler 11. In spite of these tendencies in epigraphy, it is the case that the field data are usually too massive and too well documented to ignore, and it is likely that a fruitful scholarly relationship will continue to yield its immense benefits.

Ancient Maya Social Structure

There are several models for ancient Maya society. The most traditional but least realistic one is that of the philosopher-kings, who altruistically and humanely led the grateful masses. In this view the leaders were morally and intellectually superior in the same manner as “gurus” or other religious leaders of Asian societies. This was more or less the view held by Sylvanus Morley and J. E. S. Thompson (Morley 1946). The model has been resurrected in a new form by David Stuart and other epigrapher-iconographers. Their argument is that the Maya believed the blood of kings sustained the divine and terrestrial balance of the cosmos (Schele and Miller 1986). The kings were therefore liturgical-political leaders of their small states, and the centers were ceremonial stages upon which the divine dramas were enacted. This seems almost wholly unrealistic. While there is certainly evidence of blood sacrifice, including autosacrifice, the new data from the historical texts as well as the information on Maya warfare imply a less benign and more understandable picture of Maya society and its leadership. Other archaeological data indicate a much more secular, worldly, and realistic world-view of the Classic Maya.

Haviland’s studies (1968) have indicated that kinship structure was probably patrilineal (with descent traced through the father’s line), as is the case among all known present-day Maya. The aristocratic genealogies from texts fall in with this pattern (Haviland 1977). Tomb patterns, depictive data, and settlement patterns all tend to confirm this conclusion. Furthermore, it appears that most of the ancient populations lived in clusters of houses that were the residences of married sons and their families living near the



Fig. 5-26. Late Classic Altar Q, Copan, Honduras. David Stuart thinks that this square throne shows all sixteen of Copan's rulers, with the two facing one another being the first and the latest.

elderly parents. Marshall Becker found at Tikal that even people on the lower levels of society tried to establish small shrines or mausoleums to the dead members of their lineages (1999). Therefore, it appears that from top to bottom ancient Maya society was permeated with an attitude of ancestor reverence, if not ancestor worship (fig. 5-26). Among the modern Maya of highland Chiapas, the ancestors are still among the most important supernatural beings that can be turned to for help and comfort (Vogt 1969). The emphasis on genealogical information in the hieroglyphic texts, then, was a kind of legitimization of the right of a ruler to his or her power. In spite of the patrilineal emphasis, women rulers or regents appear in the dynastic records of various sites (especially Piedras Negras, Copan, and Tikal) and were certainly important in creating marriage alliances between cities and states.

An alternative interpretation of these residential and ethnohistorical data has recently been presented by Susan Gillespie (2000). She argues persuasively that "houses" are often residential groups of unrelated people who adopt the same "kin group name" as a label of corporate unity. Noble households often head such entities and control the land that they use. Thus,

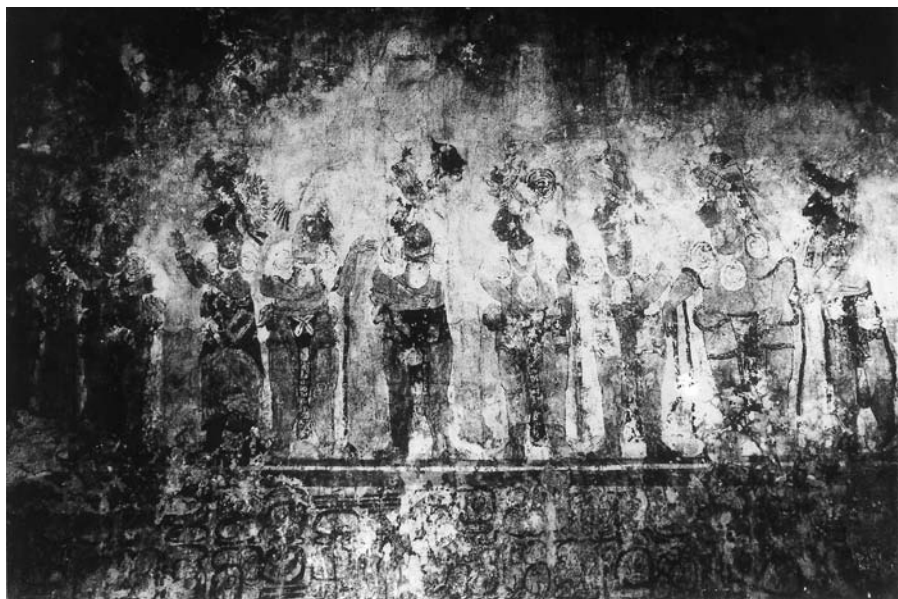


Fig. 5-27. Maya Late Classic painting, a fragment of the Bonampak murals dating to about A.D. 761. This portion shows the captives being tortured and judged after a battle, clearly won by Chaan-Muan, ruler of Bonampak. (Courtesy Giles G. Healey)

“house” is a better label for such groups than “lineage,” which denotes actual blood and marital linkages among all members. Ancestors are important to such houses, in which actual genealogies are selectively ignored. However, the noble members of houses would carefully document their ancestry. Such a model of social organization is attractive in that it fits the archaeological data. However, it postulates that ancient Maya social structure was a member of a group of “middle-range, nonclass societies,” which goes against the strong evidence for class structure in the Classic period and later. It seems to this author that the concept of “house” is not necessarily contradictory to class structure in a society. Clearly, this is a provocative and interesting subject for scholarly debate and eventual resolution.

Depictive art was a sort of propaganda mechanism that emphasized the functions of the temples, legitimized the rulers, and glorified the city and state. The roofcombs were a form of elevated billboard in this sense. The famous Bonampak murals (fig. 5-27) are undoubtedly historical in nature; the complex ceremonies, the short war carried out by allied cities, and the more domestic scenes are all profoundly connected to circumstantial events and quite distinctive individuals.



Fig. 5-28. Lintel 26, Yaxchilan. Shield Jaguar and Lady Xoc, who obligingly holds his jaguar mask for him.

The archaeological data strongly contradict any egalitarian, rotation-of-power model as the prime organizing principle of Classic-period society. Genealogical data in the hieroglyphic texts used as the justification for assumption of power provide evidence that ascriptive principles were at work in social organization. One's social ranking at birth had a great deal to do with the degree of access to all kinds of things, from sumptuous items and housing to nonmaterial affairs such as political and religious power.

An increasingly aristocratic principle seems to have characterized Maya society as time went on. Therefore, the best reconstruction that we can now make of ancient Maya society is that of a pyramidal social structure, with a hereditary aristocracy at the top (fig. 5-28). A careful gradation of rank within the directing elite was also present. In the Late Formative, there is evidence indicating that assemblies and councils of lineage heads were the principal governing bodies. By the Classic period, many of the heads of lineages had evidently parlayed their advantages into hereditary superior status. The use of genealogical justification for superior power led to ancestor worship and, ultimately, the claim to divine descent by the elite.

This elite group concentrated their attention on the administration of increasingly large aggregations of cities and smaller communities and the dense populations that lived in them. Warfare came and went but was always

another interest of the nobility, being the ultimate means of dispossessing other elite families and lineages of their cities and territories. The masses of formal buildings, nearly all at the service of the elite, certainly took up a good deal of time. The constant construction, demolition, and refurbishment of residences, funerary monuments, *sachbes*, and other structures must have absorbed a great deal of the energy of the upper class, even if they were not directly involved with the execution of the plans.

Below this caste of professional rulers were several layers of occupationally defined classes. The tedious and time-consuming tasks of administration, bureaucratic work, may have been handled by minor nobility, but on the lower levels, such as those of village headmen or district chiefs, may well have been done by commoners. An argument can be made for the existence of a scribal class, which may have been the same as the bureaucratic group just mentioned. The quantity and complexity of the art of writing among the Maya argues for full-time practitioners, scribes. Some of the senior scribes were of noble status, as demonstrated at Copan (Webster 1989), and the lack of writing among the few survivors of the collapse of Maya Classic culture suggests this. Glyphs were drawn on the walls of buildings after the severe population losses of the collapse, but these were of a rudimentary and unskilled nature. It also seems unlikely that the most exalted members of the elite class worried over the exact amounts of black beans, squash, maize, chiles, and other mundane items provided periodically by twenty, fifty, or one hundred small villages for the support of the cities.

Sculpture and fine pottery were obvious craft specialties, considering the large quantities of both produced during the Classic (fig. 5-29). A high degree of knowledge of the canons of art and hieroglyphic writing, as well as of specific skills, all argue this. Manufacturers of elite-class costumes undoubtedly occupied a special place. A wide range of exotic materials and manufactured items was involved, as well as problems of tailoring and fitting. It seems likely that there were specialists something like western culture's couturiers. Weavers were undoubtedly present; cloth is an invariable manufacture and trade item. Pieces of fifth-century textiles were analyzed by Robert Carlsen (1986, 1987) and his colleagues, who found them to be very similar to the "white-on-white," open-weave cotton gauze cloth made today around the north highland town of Coban in Guatemala. It also seems likely that the ancient Maya, like their modern descendants, wove clothing for family use and that only a few weavers made the exquisite clothing shown in sculpture and painting.

Musicians and other entertainers are depicted in art, especially in the Bonampak murals, where a full-fledged orchestra tunes up for a ceremony. Servants are also depicted in painting and, rarely, sculpture. Again in the Bonampak murals, servants are shown dressing certain august persons in elaborate costumes, adjusting jewelry, and carrying headdresses. Servants



Fig. 5-29. An Early Classic cylinder jar from Altar de Sacrificios, Guatemala. The shape is that of a favorite Teotihuacan form, but the motif is Maya: the leaf-nosed bat.

are also depicted as taking care of elite-class children, and they must have performed many other domestic chores. Maya palace buildings are often quite high and difficult of access, and workers must have been available to carry the necessary water and food to upper apartments. As mentioned before, cooking facilities and servants' quarters have been found at many Maya sites. Large numbers of people, especially sweepers and cleaners, would have been needed to keep the formal buildings, plazas, and other parts of the cities clean. Perhaps this duty was performed on a rotational basis, with the duty going to younger and less important members of society, somewhat in the manner in which the streets and town headquarters are cleaned in present-day Guatemalan Indian towns.

Construction specialists are only present by inference, but again, the mass of building and complexity of skills involved demand the presence of at least cadres of specialists in matters such as stucco modeling and stone-cutting. Much of the work involved in Maya monumental architecture, however, could have been done by part-time specialists. Every Maya man

today learns how to build a house without a nail, and such skills can easily be applied to building scaffolding for large-scale building. Modern Maya masons from Oxkutzcab, Yucatan, reconstructing the Temple of the Dwarf at Uxmal, covered that immense structure with scaffolding made of poles, planks, and rope in 1968. The directing and supervisory skills may have remained in the upper class, or there may have been foremen and master masons who ran things.

Judging by R. L. Rands's work in the Palenque region (1973), there seem to have been various specialist communities, and thus there may have been specialists in satellite communities around the cities as well as in special quarters. Rands's data also suggest that the local craft products seldom went beyond the bounds of the individual city's domain, in Palenque's case an area of about 125 square kilometers (about 85 square miles). However, Palenque was relatively isolated on the southwestern corner of the lowlands, and other regions seem to have distributed craft products widely. Colha, in northern Belize, furnished thousands of high-quality, standardized chert tools to a regional economy. It may be that these tools even reached the Rio Azul zone, about 60 kilometers (37 miles) to the west, and perhaps farther. Colha is a carefully documented specialist community that probably produced its own food but also exported its manufactures (Shafer and Hester 1983). Given the political structure outlined previously, it is likely that these manufactures were controlled and distributed within the regional states. There is also evidence at Colha and elsewhere that craftsmen such as flint knappers were attached to noble households. The famous polychrome pottery of the Classic period appears to have been manufactured on demand by such attached artisans, with the motifs dictated by the noble families, rather like the nobility of the *ancien régime* of France ordering a set of dinnerware from Sevres. A "codex style" polychrome was produced by Late Classic specialist potters who dwelt among the ruins of ancient Nakbe (Hansen et al. 1991).

The above information and patterning leads to the conclusion that the fundamental structure of Maya society was one in which there were reciprocal obligations between the classes—vertically, so to speak. To put it another way, there appear to have been patron-client relationships between noble households and commoner families. On the level of classes, we can rank the occupation in terms of the highest nonelite, who had intimate and continual contact with the aristocracy, down to those people who rarely interacted with the elite or even saw them. The former would have been those who practiced skills most needed by the rulers, and the latter would have constituted a mass of farmers, many in isolated districts of the regional states. Viewed in this way, Maya society probably had at least five classes: elites, petty administrators and stewards, skilled artisans, commoner-farmers, and the ever-present dispossessed. Judging by Haviland's evidence for ranked

patrilineages at Tikal (1968) and confirmatory studies from elsewhere, it appears that relationships within classes were primarily based on kinship.

Control of land seems to have been nearly completely in the hands of the elite by the beginning of the Classic, and perhaps in the Late Formative in the Mirador regional state. The manor houses and palace structures in the countryside of the Rio Bec, Chenes, and Three Rivers regions (and other zones as well), indicate control of the general terrain and particularly of the zones of intensive cultivation. However, these lands would have been cultivated by the commoners bound to noble families by reciprocal obligations (protection by the elite and production by the commoners). These features generally characterize social systems that have been called "feudal" (Coulborn 1956). Feudal systems are known not only from Europe, but also from medieval Japan (pre-Shogunate) and from ethnographic situations—Ruwanda-Burundi, for example (R. E. W. Adams and Smith 1981). The model has been criticized because some archaeologists have maintained that feudal structures are only characteristic of disintegrating social structures, particularly in eighth-century Europe after the fall of the Roman administrative system. However, feudal systems are found in other circumstances, the features fit the Maya well, and such a model explains the universal problems of land and manpower control. The concept of "house as a residential and economic group" is correlated by Gillespie with the feudal systems cited as being similar to that of the Classic Maya (Gillespie 2000; R. E. W. Adams and Smith 1981). It is without doubt the case that many Maya regional societies went beyond the rather loose feudal system, particularly Tikal, Calakmul, Uxmal, and perhaps Seibal becoming centralized, bureaucratic systems. However, it appears at this point in Maya studies that these most rationalized structures developed from a generalized feudal base.

Arthur Demarest (1992) has suggested that a concept derived from Southeast Asian studies, that of "pulsating galactic polities," is a good model for Classic Maya social and political structure. He argues that the uncoordinated decline and rise of the most important Maya cities cannot be explained by coordinated events such as climatic shifts. Therefore, the shifts in political fortunes should be in some manner connected to cultural institutions, and probably to the nature of Maya leadership. The "pulsating galactic polity" notion is that strong individuals at the head of kinship-oriented states surround themselves with subordinate chiefs who ally themselves to the larger cities on the basis of the "real-politik" of outstanding personal leadership. The fact that this type of leadership is, by its nature, ephemeral and shifting, accounts for the patterns of relatively rapid rise and fall in the Maya Classic.

These ideas, while attractive, fly in the face of the increasing evidence for the importance of territoriality and regional state organization in the

Maya Classic. Dynastic continuities at Tikal and Copan were at least as stable as those of ruling houses in Europe. Furthermore, it seems to me that the “pulsating galactic polity” concept leans too heavily on the “great man” theory of history in a thinly disguised form and ignores the stability given political organizations by cultural institutions such as ancestor veneration. The Demarest model is nonlinear, but also nonevolutionary, ahistorical, and functionalist. In the end it explains little except the internal working of societies already in being. It can also be noted that the functional parallels between Southeast Asian and Maya societies were first pointed out by M. D. Coe (1957b). On the other hand, the model may illuminate the inner workings of city-states such as the fortresses of Ek Balam in the north or Tonina in the south.

At this point, we have passed from social structure and returned to political systems as they may have been transformed through time. We must now examine a reconstruction of Maya history and cultural evolution.

A Political and Cultural History of the Late Formative and Classic Maya

The following is one archaeologist’s reconstruction of the major events that we now see as crucial in Maya cultural history, both from the political and anthropological points of view. It is built on the work and ideas of many colleagues and predecessors, some of whom may not recognize their brainchildren in their new forms.

In the Late Formative it appears that a number of hitherto independent villages were aggregated into coalitions that supported certain regional centers. I have avoided the use of the term *chiefdom* here because of our uncertainty as to the real nature of Late Formative leadership. We have no idea at present how many of these coalitions there may have been in the lowlands. Some were based on the development of trade, the port of Cerros and possibly Lamanai being examples. In the north, Komchen was probably trade based as well, exploiting the nearby salt fields. Leadership was by heads of ranked lineages, who, we may speculate, were governing councils for zones and villages and focused on regional centers. Mirador, with its gigantic structures, was surely one of the largest and seems to have been the capital of a web of centers (including Calakmul), which were connected by roads and supported by large rural populations around the shallow lakes of north central Peten. Tikal was an important center but did not yet rival Mirador. Edzna in the west central zone and Becan in the center were also this type of center. Altar de Sacrificios in the south was yet another zone, as was its neighbor on the Pasión River, Seibal. These interior and southern communities seem to have based their growth more on population mass than on development of commerce. W. T. Sanders suggests that these centers were either focal points of, or parts of, enclaves

and that there were thinly populated zones between them. Ideological differences can be seen among these various centers and regions. Competition took the frequent form of organized warfare, and fortresses appeared at nearly all of the locations mentioned above.

In Early Classic times, population growth evidently continued and competition between these centers heated up. The centers were converted from regional market/administrative centers to cities. Likewise, social structural changes took place that converted the old lineage heads to hereditary aristocracy with client commoner families. A basic feudal system developed, with an aristocracy based on control of land and water and the labor to work it. Stated in another way, the shift was from a kin-based to a tributary mode of production.

Mirador failed at the beginning of this period. It may be that some kind of soil/water failure through drought drove people away from the cluster of lakeside centers, although there is evidence for a substantial Early Classic population. It also seems possible that this fortified center was overcome by another defended city—Tikal, or possibly Calakmul, according to Marcus. The thrusting elites of the Early Classic seem to have consolidated as many cities and lesser communities as they could under the leadership of a single dominant city. Tikal certainly falls into this category, and the replacement regional capital for Mirador, Calakmul, seems to do so as well. A well-defined boundary buffer zone developed between Tikal and Calakmul and their regional coalitions. However, at that moment, about A.D. 350, an outside intervention seems to have transformed the situation.

Teotihuacan is mentioned at Tikal several times in connection with a date that corresponds to about A.D. 360. It appears that connections between the two great cities existed before, probably on a commercial/trade basis. Teotihuacan was apparently a despotic and extraordinarily well-organized city and capital of an empire, probably for the purpose of trade as well as other benefits. Tikal was one of the largest and certainly best-organized Maya cities by that time. Commodities that certainly interested Teotihuacan included cacao, salt, honey, and beeswax as well as medicinal herbs. All of these were sixteenth-century exports from the lowlands. Tropical woods and bird feathers were also of great value to the highlanders. Many of these items require a well-organized population—especially herbs, which require exact knowledge of what plant part is to be used in what form for what ailment. At any rate Teotihuacan displaced the ruler of Tikal, a certain “Great Jaguar-Paw” (Ruler 11), at about A.D. 378 and placed a more amenable potentate on the throne—one Clemency Coggins (1979) nicknamed “Curl-Nose” from his name glyph. Apparently, this gave Tikal an edge over other Maya cities, and it expanded still further. Part of the benefit it received from the alliance was that of military advice. According

to Coggins, whose reconstruction this is, Curl-Nose married a woman who may have been a daughter of Great Jaguar-Paw.

Tikal expanded in several directions, but certainly to the Rio Azul region about A.D. 392. The Rio Azul rulers were executed, as shown on a set of altars found at that city. Rio Azul was established as a frontier fortress, and the boundary with the Calakmul state consolidated. Curl-Nose's son, "Stormy Sky," is shown on Tikal Stela 31 as a Maya ruler but flanked by Teotihuacan warriors. One of his sons was born in A.D. 417 and was eventually appointed governor of the district dominated by Rio Azul. This governor was also provided with military and other sorts of advice (R. E. W. Adams 1987b, 1998). Even more strikingly, the coup d'état that placed Curl-Nose on the throne seems to have led to the insertion of a Tikal ruler at Copan, as noted above.

It appears that during this period Tikal probably moved far beyond the basic feudal political system and became a much more centralized and bureaucratic state, somewhat along the lines of Teotihuacan. Evidence for Teotihuacan presence has recently been found in the form of more than twenty-five small portraits of Teotihuacan warriors at the medium-sized site of Holmul to the east of Tikal (Estrada Belli 2001).

Such a drastic reorganization and probable displacement of powerful families created an eventual backlash. Teotihuacan, for reasons discussed in the next chapter, began to withdraw from its far-flung contacts in the late fifth century. This left the usurping rulers without outside support. Coggins suggests that the older ruling families tried to make a comeback. Ultimately this attempt failed, but apparently it created a series of civil wars and internal revolts in the southern region, especially in the Tikal region state. Rio Azul was overrun and destroyed during this period, which is the period of the hiatus in Maya texts, lasting from ca. A.D. 534 to 593.

It was during this time of troubles that the smaller city of Caracol in southern Belize apparently claimed a battlefield victory over Tikal (A. F. Chase and Chase 1987). While this is probably correct, the implication that Caracol replaced Tikal or took over its territory is almost certainly not. The massed demographic power of a regional state such as Tikal far outmatched anything that Caracol could muster. We must remember the propagandistic function of such texts as well.

In the north, Teotihuacan seems not to have made such an impact. Coba was certainly an important regional center during the Early Classic (Folan 1978; Folan, Kintz, and Fletcher 1983), but it may be that it only reached city and city-state levels of organization toward the end of this period (ca. A.D. 500). Folan and others (1994) have postulated that a dry period inhibited growth at the end of the Late Formative, especially in the north, with its relatively marginal rainfall. Komchen was abandoned at the

end of the Late Formative, and Dzibilchaltun seems to have collapsed as well (E. W. Andrews V 1981). There is a possibility that the coastal trade route collapsed as D. Freidel has suggested, but there seems to be no evidence to support this. Teotihuacan presence and contact is suggested by a *talud-tablero* platform at an outlier group of Dzibilchaltun, but Andrews is not sure if this presence is connected with the collapse (1981). Perhaps Teotihuacan traders moved into a zone disorganized by drought problems and established a salt-administration center.

Meanwhile, the political perturbations of Teotihuacan intrusion and its later withdrawal upset the development of various sites. Altar de Sacrificios and Seibal were very weak centers during this period.

The even more devastating events of the hiatus and the suggested civil wars and revolts in the south required a lengthy recovery. It was not until about A.D. 650 that Maya civilization began to function again, and then it was somewhat different than before. This seems to have been a wetter period (Folan et al. 1983), resulting in the rapid development of more regional states than before. Coba became a capital in the northeast, as Dzibilchaltun apparently did in the northwest, with populations of about 40,000 and 25,000, respectively. Becan and many sites of the Rio Bec zone flourished, with rural populations reaching up to 450 people per square kilometer (1,016 per square mile), supported by more than 10,000 square kilometers (3,900 square miles) of terraced hillsides and drained fields in swamps (R. E. W. Adams 1981). Calakmul to the west seems to have been a large city of about 50,000, supported by surrounding wetland cultivation and extensive hydraulic works (Fletcher, May Hau, Florey Folan, and Folan 1987). Calakmul exalted its rulers with the largest number of carved stelae known from any site (Folan et al. 1995). Intrigues, military moves, betrayals, and other political maneuvers were apparently engaged in by Calakmul and Tikal in their long-lived struggle for supremacy in the central lowlands. For example, at one point, Calakmul subverted the alliance between Tikal and the very large city of Naranjo.

On the southwestern and southeastern corners of the lowlands, the remarkable sites of Palenque and Copan flourished, with strong rulers who are known to us by name. This includes Pacal, whose extraordinary tomb has been found (Ruz 1960) and whose accomplishments, along with those of his descendants, are known to us in great detail thanks to the work of a group of dedicated scholars. Pacal was primarily a great builder and organizer, and the site we see today, including a very large and complex palace with a tower, is largely as he designed it.

It appears that the southeastern center of Quirigua had been established by a dynasty linked to the Tikal ruling families. Following an immense flood in the sixth century, the location of the major public architecture was shifted to its visible present site. After that move the center flourished



Fig. 5-30. Central Acropolis at Tikal, Guatemala. The Late Classic residences of Tikal's rulers, including, probably Ruler 26 (Ruler A), who is buried under Tikal Temple I in the left middle ground.

as never before, constructing an acropolis of palace and temple buildings and erecting immensely tall and finely carved monuments to its rulers (Ashmore 1984). It has been suggested that the evident wealth to pay for all of this conspicuous consumption came from the large-scale production and export of cacao. The basic economic structure was probably that of aristocratic extraction of tribute from the regional population.

The larger nearby city of Copan also had a series of great rulers and only encountered difficulties at the end of the Classic when the neighboring site of Quirigua captured its king, Ruler 13, who was decapitated. Copan languished after that disaster, and although the next three kings struggled to overcome the problems, the valley apparently lapsed into an ever-deteriorating environmental and political situation.

It is to Tikal and its regional state that we must finally turn, because of the immense amount of detail that has been produced by several generations of work there. Ruler A at Tikal came to power about A.D. 682 and began a great deal of the building program, which included the giant temples (fig. 5-30; C. Jones 1977, 1987). He was a descendant, or made claim to be, of the Curl-Nose dynasty, so the Teotihuacan-linked usurpers won in the end after all. Ruler A was buried with an incredibly rich amount of



Fig. 5-31. Late Classic Temple I at Tikal, Guatemala, during the process of excavation. Built by eighth-century Ruler A, it proved also to be his burial place. Much of presently visible Tikal is the work of this king and his two successors. (Courtesy William R. Coe III)

jade. We know that it was Ruler A (Ruler 26) in the tomb of Temple I at Tikal because his name is monogrammed on his hair tweezers, on a mosaic pot placed with him, and on several other objects (fig. 5-31). Altar de Sacrificios revived and was linked by blood and marriage with more important cities such as Tikal. Tikal had about 62,000 people by A.D. 750. Rio Azul was not much larger than before, but it was somewhat rebuilt after the catastrophe of the hiatus. The site of Kinal was selected as a citadel and probable administrative center for the district during the Late Classic.

One general characteristic of Maya culture wherever one finds it during the Late Classic is the immense increase in the size and numbers of the buildings. Huge palaces were built in all zones, and there was an implied increase in the size of the resident elites as well (Willey and Shimkin 1973). The labor burden on the commoners must have increased something on the order of ten times. Wetland cultivation was increased to its maximum, and other forms of intensive agriculture were expanded. Deforestation was undoubtedly a problem. Firewood simply for cooking and heating would have been scarce, but immense amounts were also required to produce the high-quality slaked lime for the building programs practiced by rulers such as Tikal Ruler A. Hansen (pers. comm. 2004) feels that a great many of the problems that led to the collapse of Mirador were environmental, deforestation leading to erosion leading to the silting in of the lakes. Yet the Maya rulers seemed to have had no more heed for these problems and others than our present-day politicians do for the rapid destruction of modern tropical forests. The expansion of all parts of Maya society made it vulnerable to many internal and external stresses, leading to increased military competition and ultimately to the sudden and final catastrophe of the ninth century. Before we consider this event and its implications, however, we should examine the other polarity of Mesoamerica for this period, the great and different city of Teotihuacan.

CHAPTER 6

TEOTIHUACAN, MONTE ALBAN, AND OTHER EARLY CLASSIC CIVILIZATIONS

There at Teotihuacan, as they say, in times past, when yet there was darkness, there all the gods gathered themselves together, and they debated who would bear the burden, who . . . would become the sun.
Sahagún 1963, 3:1

And there [in Teotihuacan] all the people raised pyramids for the sun and for the moon; they made many small pyramids where offerings were made. . . . And when the rulers died, they buried them there. Then they built a pyramid over them. . . . For so it was said: "When we die, it is not true that we die; for still we live; we are resurrected. We still live; we awaken.

Sahagún 1961, 10:191

MOTECZOMA II, WORRIED by events of ill omen, is said to have made a pilgrimage to the dead city of Teotihuacan a few years before the arrival of the Spaniards (Vaillant 1941, 65). There he made sacrifices and communed with the gods. As it turned out, his prayers were futile, but his worries were justified. Moteczoma was following a long tradition of pilgrimage established in a past so distant to the Aztec that they had lost the history explaining the enormous fossil metropolis. Even in ruins, Teotihuacan was so impressive that the sixteenth-century people of the Basin of Mexico thought the city had been built by direction of the gods. The myth of the successive suns tells that the gods assembled at Teotihuacan in the primordial darkness to bring light to the cosmos. Two of the gods were believed to have sacrificed themselves in a fire and thus became the sun and the moon. After that, humanity gathered at the place and built the great city (León-Portilla 1961, 23–27).

A major and sustained effort at understanding Teotihuacan began with Manuel Gamio's 1917 project and continues today with a fifth generation of scholars. Fortunately, the work of excavation and study has focused on the entire Valley of Teotihuacan and not just on the city.

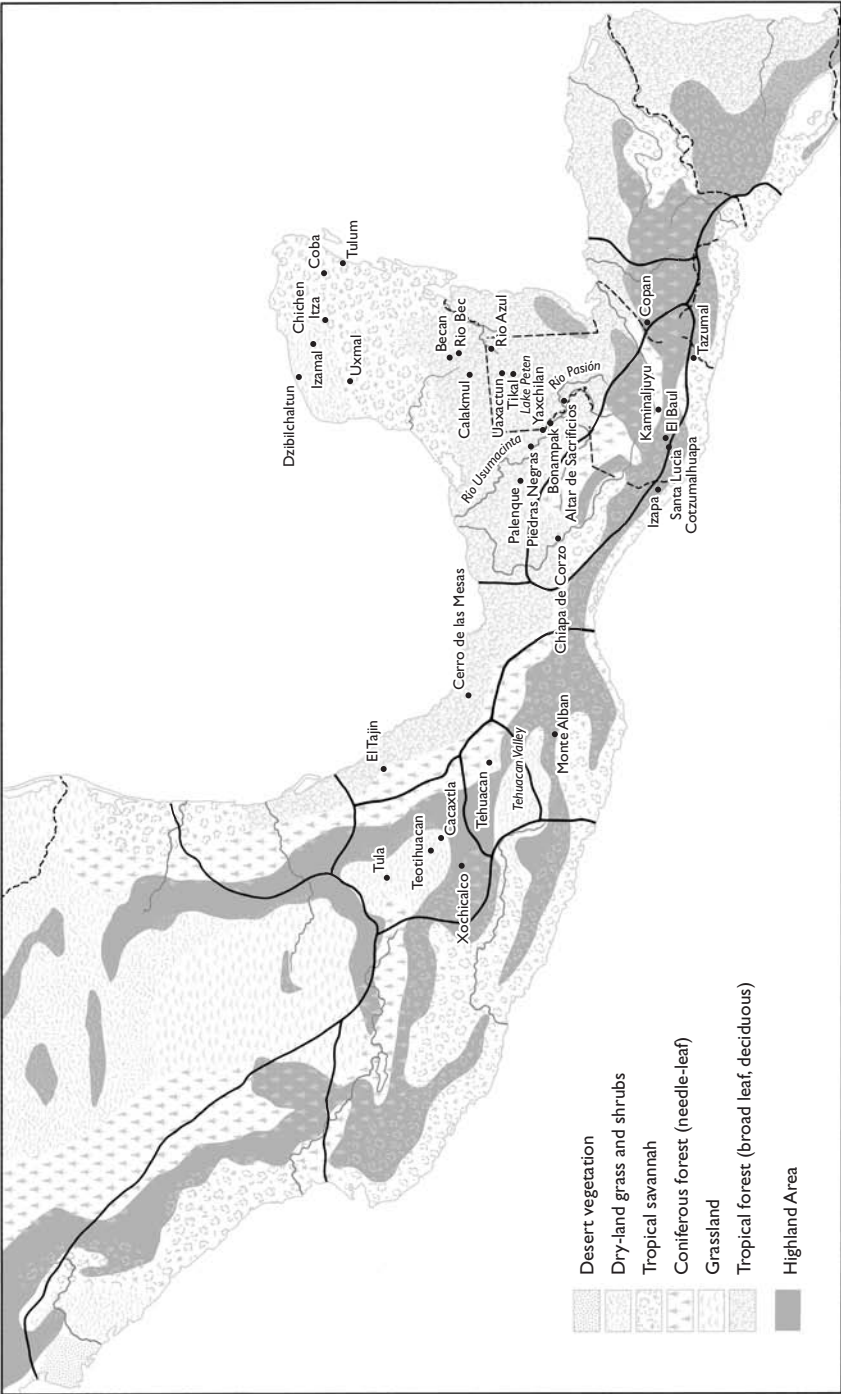


Fig. 6-1. The Pyramid (or Temple) of the Sun, Teotihuacan, viewed from the Pyramid (or Temple) of the Moon, with lesser platforms in the foreground. All of these structures once supported brightly decorated temple buildings. (Courtesy Rene Millon)

Chronology

A series of phases divides the cultural history of the city into several periods lasting from about 200 B.C. to about A.D. 650. The terminal date is still in dispute, and it may be that the city lasted until about A.D. 750. The important point is that even if this latter date is correct, Teotihuacan had lost its imperial and dominant status by 650, when its public buildings and palaces were pillaged and destroyed. Thereafter it survived only as a large remnant city, with its total abandonment only postponed until A.D. 750. On the other hand, there is no dispute over the major features of Teotihuacan's rise and cultural apogee.

It seems quite likely that the giant Pyramid of the Sun was built about 150 B.C. (fig. 6-1). About the same time as this feat of construction, the population of the urban area rose sharply, from about 2000 at 200 B.C. to about 60,000 at A.D. 100 and finally to about 150,000 or more at A.D. 600. There is strong evidence that this growth resulted from the concentration at Teotihuacan of most of the population of the Basin of Mexico



Map 6-1: Classic Mesoamerica, showing the distribution of early civilizations over its vast zones.

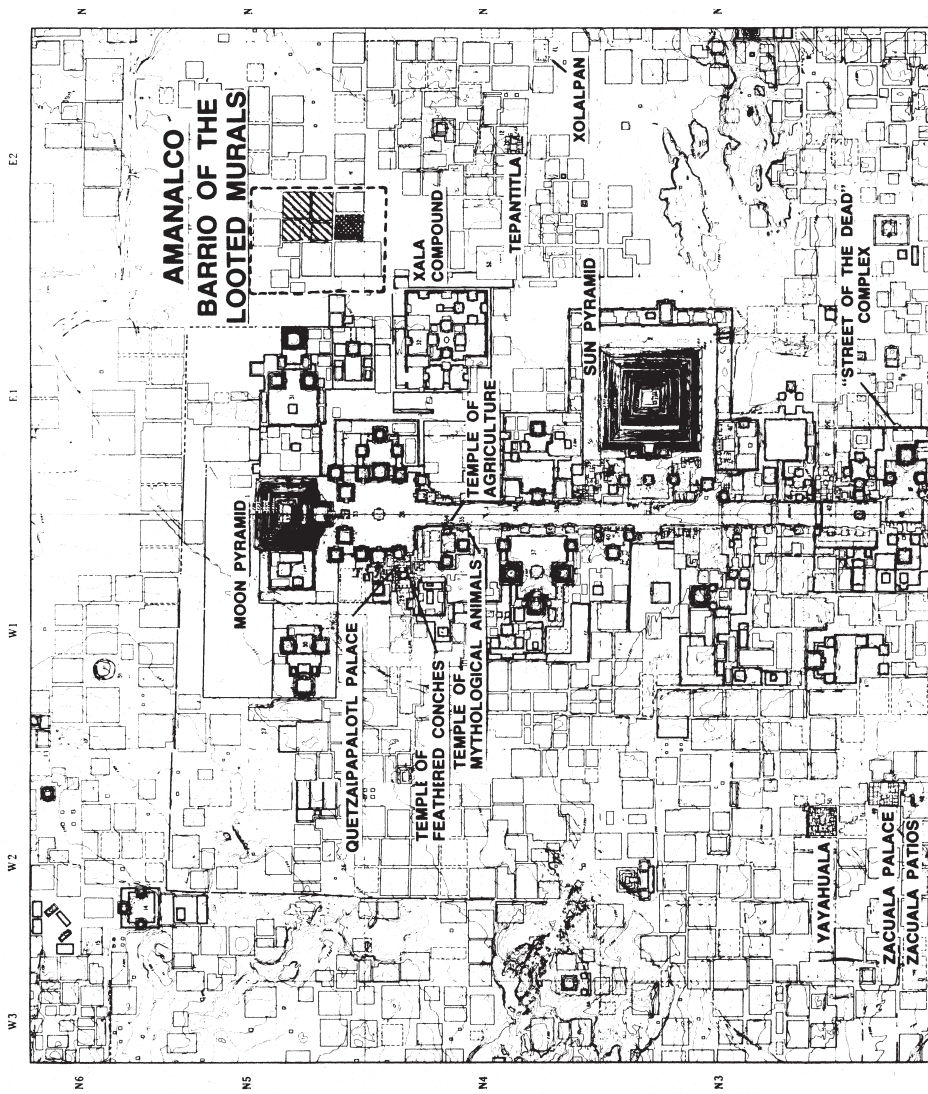
and not from a population explosion. It is clear that Teotihuacan must have had political and social control of the basin to be able to accomplish this aggregation. Further, it is now clear that this immense population was physically reorganized in the fourth century A.D. by construction of most of the two thousand apartment compounds that make up the bulk of residences at Teotihuacan. To understand this overwhelming dominance not only of the basin but of great areas of Mesoamerica (see map 6-1), it is easiest to begin with an examination of the city at its height. This will indicate the functional relationships of the parts of the city and will show some of the imperatives that drove Teotihuacan to its position of preeminence.

The Urban Capital: A Survey

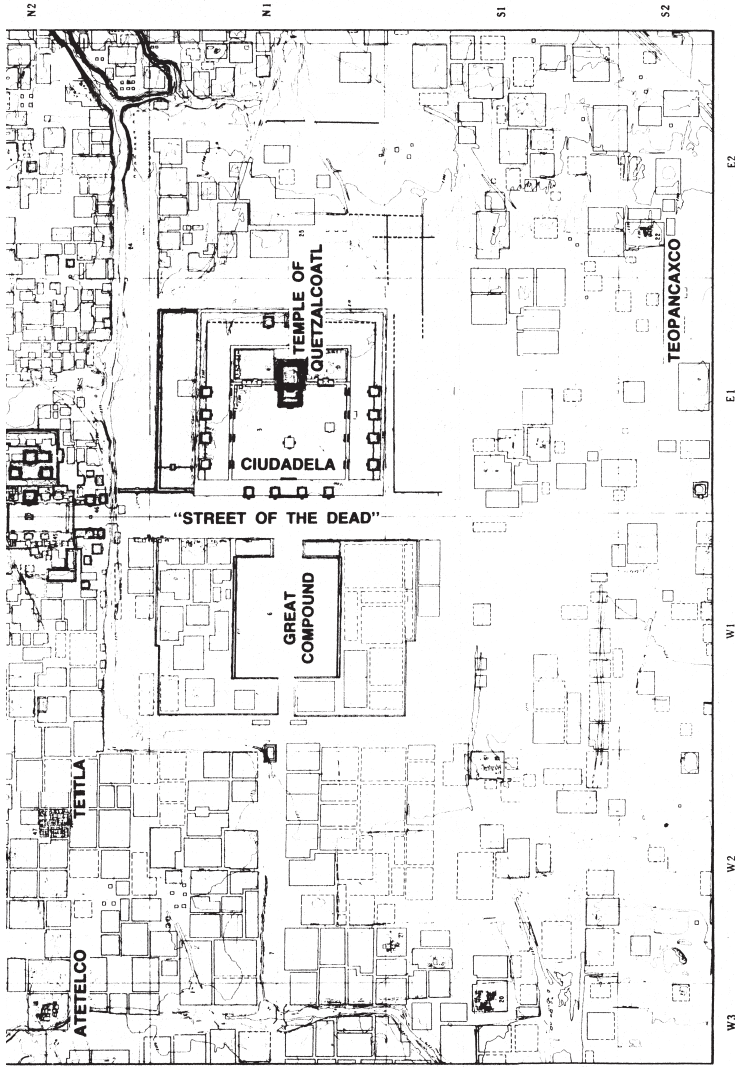
According to the mapping project directed by Rene Millon (1970, 1973, 1981), Teotihuacan at about A.D. 600 sprawled over a huge irregular area of about 20 square kilometers (about 8 square miles; map 6-2). The space was occupied by avenues, markets, plazas, temples, palaces, apartment compounds, a grid system of streets, slums, waterways, reservoirs, and drainage systems. The city ultimately was laid out on a north-south axis of about $15\frac{1}{4}$ degrees east of north. This orientation was also typical of other contemporary centers on the central plateau under the domination of Teotihuacan. The major north-south avenue is now known as the Street of the Dead. This is a name, like all others at Teotihuacan, applied by the Aztec and by archaeologists at best or by tourist guides at worst (fig. 6-2). Another major avenue is on an east-west axis, and the two great streets intersect at the location of the administrative, religious, and market center of the city, the Citadel zone.

Along the north-south main street are clustered sumptuous and lavish elite residences that jostle with large and small temple platforms. The street is also the location of the two gigantic pyramids of the sun and moon as well as of the Citadel and the Great Compound. Away from the north-south street, arranged on a grid system of smaller streets, are one-story apartment houses. Most of the population ultimately lived in these formal structures. On the edges of the city, less formally planned clusters of rooms built of poorer material are found, including one- and two-room houses that resemble those built today in the valley. These were probably Teotihuacan's slums.

Springs rise from the ground in the southwest section of the city, and their waters were led away to fields and *chinampas*. Some still-extant canals are oriented to the Teotihuacan grid. The location of the ancient city was determined by these springs, which were evidently more widespread in ancient times. The sources of the San Juan River are separate and derive from runoff and tributary streams some distance up the valley. In Teotihuacan times, this river was channeled and fed through the city, winding down its eastern edge and then turning west to run around the Citadel and Great



- KEY**
- Pyramid of the Moon
 - Pyramid of the Sun
 - Ciudadela
 - Temple of Quetzalcoatl
 - "Street of the Dead"
 - Great Compound
 - West Avenue
 - East Avenue
 - Xolalpan
 - Tepantitla
 - Maguety Priest Murals
 - Plaza One
 - House of the Eagles
 - Atetelco
 - La Ventilla A
 - La Ventilla B
 - La Ventilla C
 - Teopancaxco
 - Rio San Juan
 - Reservoirs
 - Plaza of the Moon
 - Quetzalpapalotl Palace
 - Group 5'
 - Group 5
 - Xala Compound
 - Building of the Altars
 - Temple of Agriculture
 - Mythological Animals Murals
 - Puma Mural
 - Plaza of the Columns
 - Explorations of 1895
 - Palace of the Sun
 - Patio of the Four Small Temples
 - House of the Priests
 - Viking Group
 - "Street of the Dead" Complex
 - Explorations of 1917
 - Superposed Buildings
 - Explorations of 1908
 - Tetitla
 - Zacuala Patios
 - Zacuala Palace
 - Yavahuala
 - Acumulco



- LEGEND**
- Excavated room complex or other structure
 - Unexcavated room complex
 - Possible room complex
 - Rm.cmpl.—some limits unclear
 - Temple platform
 - Single stage platform
 - Insubstantial structures
 - Major Wall
 - Watercourse
 - ~ Probable old watercourse
- 0 100 500
meters

Teotihuacan Mapping Project
 Rene Millon, Director
 Department of Anthropology
 University of Rochester
 Rochester, New York
 September 1970 Copyright 1972
 By Rene Millon
 Aided by grants from the
 National Science Foundation
 Chief Draftsman, J. Armando Cerda

Grid is Oriented
 Ca 15°25' East of
 Astronomic North,
 Sun Pyramid
 19°41'30" N. Lat.
 98°50'30" W. Long.



CONTOUR INTERVAL ONE METER

Map shows part of ancient city ca. a.d. 600. Structures or parts of structures which are excavated and Teotihuacan Mapping Project test excavations are shown. Reconstructions based on the project survey of surface remains of unexcavated and partially excavated structures are also shown. Note canalization of watercourses.

TEOTIHUACAN
 CENTRAL PLATEAU OF MEXICO
 ARCHAEOLOGICAL AND TOPOGRAPHIC MAP
 OF THE NORTH CENTRAL ZONE

Courtesy René Millon

Map 6-2. Central sector of Teotihuacan. Note the distinctive grid pattern oriented to the cardinal points and around the two major avenues. Most of the 2,600 buildings in the city are apartment compounds, and most of them unexplored.

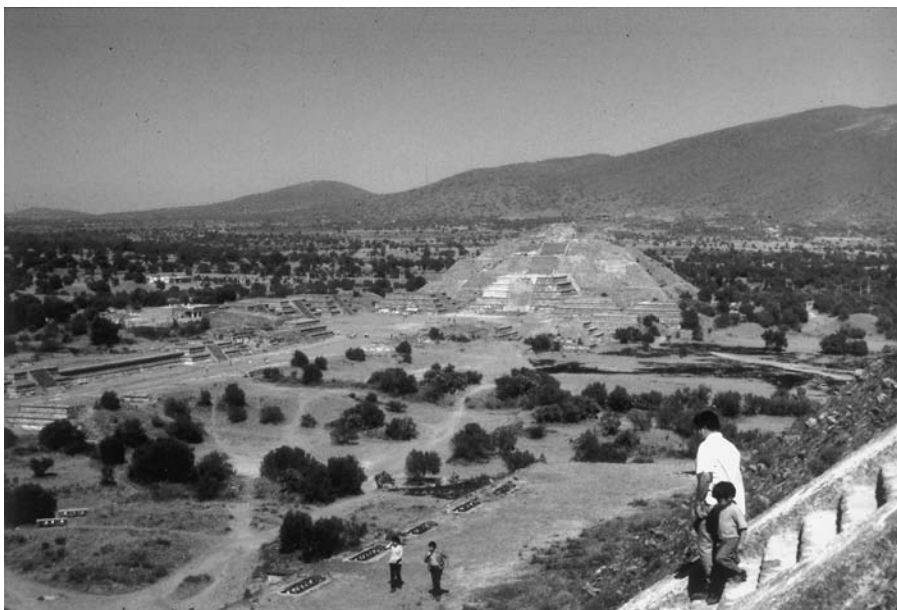


Fig. 6-2. The Pyramid of the Moon viewed from the Pyramid of the Sun. The moon structure sits on the north end of a great avenue now called the Avenue of the Dead, certainly not its ancient name.

Compound zone. Ultimately the river gave access to the great sheet of lake water that lay to the southwest of the city. Reservoirs were built and side channels dug that gave more of the city's inhabitants access to river and spring water. Wells have been found within the city, sealed under later floors (G. L. Cowgill, pers. comm.).

One of the many significant findings of the Teotihuacan mapping project was the discovery of walls that are at least partitions and may be defensive. Such walls set off large parts of the city from one another and define their boundaries. Examples are the east-west walls located just north of the Pyramid of the Moon. These walls tie in with another wall that runs north-south, protecting or delimiting the western city limit until this function is taken over by the Barranca de Malinalco. Millon notes that the *chinampa* district in the southwest would also slow any attacker and on the east the San Juan River would serve the same purpose, the latter being more than 80 meters (264 feet) across and 20 meters (66 feet) deep in places (Rattray 1987). Millon makes a convincing case that Teotihuacan may have been a clumsy giant but was certainly not a defenseless city (1973). If belts of cactus were added to the other features, defenses would have been strengthened.

The oldest part of the city is in the northwestern quarter, where architecture dating to Tzacualli times (about 150 B.C.) has been found. This 8-square-kilometer (3.08-mile) section also became the most densely populated part of the city. Everything noted above except for the slums points to urban planning and controlled growth from at least Tlamimilolpa times (A.D. 200). Whether the entire city followed a master plan or simply grew by accretion within the quadrants formed by the avenues is unknown but is also somewhat irrelevant. From the point of view of urban definition, Teotihuacan shows every evidence of having been a sophisticated and gigantic center, with its growth following a general and perhaps very detailed plan.

Construction Techniques, Materials, and Style. The favorite building technique at Teotihuacan was a kind of pudding made of chunks of porous volcanic stone (*tezontle*) set in a matrix of clay, gravel, and mortar. Walls, ceilings, and floors were covered with heavy coats of plaster and finished by polishing, which made them both attractively glossy and impermeable. Large amounts of wood were used to construct roof beams, vertical supports within walls, centers for masonry pillars, and door lintels. Huge tree trunks were incorporated into platforms to transmit weight to the ground. It has been suggested that deforestation probably resulted and led to erosion of agricultural lands (Rene Millon 1967). At first sight then, Teotihuacan architecture might seem concrete enough to satisfy the most demanding fire marshal, but it concealed highly flammable materials within the plaster and mortar. Add to these the equally flammable textiles, wood, feathers, and mats in the buildings, and the fire rating would probably have been very high (Margain 1971; Marquina 1964). The fire hazards were similar to those at Casas Grandes, where a fierce conflagration also incinerated the town (Di Peso, pers. comm.). When Teotihuacan was finally destroyed, an enormous fire left a blanket of ash and debris that is found nearly anywhere one excavates in the central zone.

Teotihuacan developed a characteristic architectural style on which archaeologists depend in the detection of the city's influence on other cities of the time. Buildings were single story and flat roofed, whether placed directly on the ground, on low platforms, or elevated. Edges of roofs were decorated by large ceramic elements. Spouts from the roofs and underground drains from the patios carried off rainwater and sewage. Large and small interior courtyards allowed fresh air and sunshine to penetrate the windowless structures. Porches, arcades, and wide doorways relieved the otherwise faceless exteriors. As in later Tenochtitlan (the Aztec capital) and much other traditional Mexican architecture, the most attractive features of the buildings are concealed within.

Platforms supported both temples and some elite dwellings. These platforms are distinctively styled into a set of terraces using what has been named the *talud-tablero* (terrace-recessed panel) form. The concept is best grasped

visually; it consists of a slanting terrace wall topped by a vertical framed panel. The terrace top recedes to the base of the next terrace wall, and so the *talud-tableros* continue to the top of the platform. Decorative and symbolic painting is often found in the panels.

Civic and Religious Structures. The largest buildings at Teotihuacan are the Pyramids of the Sun and Moon. Both are platforms that undoubtedly supported temples. The discovery of an ancient tunnel leading to a cavern under the Pyramid of the Sun suggests one of the functions of the huge piles. Water was led through the now dry cavern via a channel (Rene Millon 1981). Therefore, it may have been conceived of as the house of the storm god, a principal deity of the city. Millon also suggests that in accordance with the ancient chronicles, the cavern may have been thought of as the birthplace of the sun and moon (see the epigraph at the beginning of this chapter). Tombs of distinguished persons also may be located within the mass of the two large structures. The two pyramids both have frontal platforms similar to those used as locations for burials at the Teotihuacan-influenced city of Kaminaljuyu. The promising discovery of a sacrificial burial under the frontal platform of the Pyramid of the Moon may indicate a further elite burial elsewhere in the main structure. The structures are oriented and arranged differently, with the west-facing Pyramid of the Sun enclosed by a massive platform topped by inward-facing buildings. The south-facing Pyramid of the Moon is on a large open square, and its bulk is emphasized by the fact that the Street of the Dead rises toward the pyramid, which is visually backed up by a local mountain.

Along the Street of the Dead are a number of impressive pyramids, courtyards, and complexes of apartment buildings. One set of courtyards, pyramids, and other buildings on both sides of the great avenue has been named the Street of the Dead complex (Rene Millon et al. 1973; Rene Millon 1992) and has been suggested as the administrative center of the city late in its history. It is walled off, but only partly, and the Street of the Dead splits the buildings apart from one another and provides avenues of entry. George Cowgill (2000, 264) suggests that an early administrative center may have been somewhere near the Pyramid of the Sun. To my eye the Pyramid of the Sun complex is very like the Citadel complex in its basic layout, the difference lying in the Pyramid of the Sun's more massive scale. Cowgill, however, sees far less resemblance between the two.

To the south of the Pyramid of the Sun (home of the sun?) and across the artificially channeled river is the famous, later, and fortunately named Citadel (Ciudadela) complex (fig. 6-3). The major part of this complex consists of huge platforms surrounding a great square. The north, east, and south platforms also once supported walls that would have been defensible. On the eastern edge of the square is located what must have been one of the major temples of Teotihuacan, perhaps dedicated to the storm god



Fig. 6-3. The Ciudadela, or Citadel, Teotihuacan. A part of the richly ornamented terraces of the Temple of Quetzalcoatl, which was covered by later construction and thereby preserved. Feathered serpents and Tlaloc (rain-god) faces and bodies writhe among seashells and other water symbols.



Fig. 6-4. Detail, Temple of Quetzalcoatl, Teotihuacan. The Tlaloc (rain-god) faces seem to be crocodilian, with pebble-grained skin. The serpent heads with ruffs possibly represent Quetzalcoatl, whose name means "Feathered Serpent."

and/or to the feathered serpent (fig. 6-4). Two building phases are now visible. The earlier temple, dating from about A.D. 150, is a spectacular example of Teotihuacan architectonic sculpture. Great feathered-serpent bodies writhe across the *tablero* panels, punctuated regularly by projecting heads of serpents and what is perhaps a particularly elaborate headdress for the feathered serpent (Sugiyama 1989). A grand staircase with balustrades decorated by toothy serpent heads leads to the top of the pyramid. The sculpture is highlighted by painting in greens, reds, and white. Seashells and other water symbols strongly suggest that one is in the presence of the storm god. The temple atop this glorious structure is long since gone, destroyed in ancient times and its remains used for fill in the later temple that covered the west face of the earlier one.

Digging into the earlier temple, Saburo Sugiyama found some of the most interesting, appalling, and revolutionary data (Cabrera et al. 1991). The mass burials of over 130 people were discovered inside and just outside the temple platform. The amount of unexcavated area indicates that the victims likely numbered about 200. In any case, none died of natural causes. Most had their hands and arms bound behind them, and many of the younger males had military paraphernalia and even weapons with them. At

least five classes of individuals are present in this burial, the younger ones being female and buried in sets of eight. George Cowgill suggests (2000) that the young men, buried in sets of eighteen or twenty, were bodyguards for the ruler. Exactly under the center of the platform was buried a group of twenty people who seem to have had more prestigious items buried with them; these were older men. There were also single burials outside, on the edges and corners of the platform. Two central axis pits under the platform and one in front of the staircase had been looted in ancient times. One person, an unusually robust male, was left undisturbed in one of the pits.

Cowgill suggests that the now missing skeletons of the two large pits under and in front of the platform may have been those of rulers of Teotihuacan (2000, 271). This pattern of interment, called retainer burial, is similar to that seen in the burials of important persons in the ancient cultures of Mesopotamia (Ur) and China (Anyang). The basic idea seems to have been to send retainers (courtiers, advisors, bodyguards, concubines, wives) into the afterlife with the ruler. Clearly, these men and women at Teotihuacan did not go willingly. Whether or not there was a yet more sinister event is uncertain. It is suggested by several specialists (G. L. Cowgill 2000; Rene Millon 1992; Pasztory 1988, 1997) that the government at Teotihuacan was despotic and authoritarian in its early days (the first two centuries) and that this burial event was a way of disposing of powerful members of such a government. Thereafter, it is argued, the governmental structure became more group oriented and less personality focused. We shall return to this question.

The later structure is plain and relatively unadorned, consisting of severe *talud-tablero* terraces. In ancient times it was decorated brightly with painted stucco. However, it was built after the mass sacrifice and is actually a large platform attached to the front of the Feathered Serpent Temple, covering most of the sculpture of the early temple.

Clusters of rooms like those found in the apartment compounds and palaces were found on the terrace abutting both sides of the main Citadel temple. Rene Millon suggests that this was the double palace of Teotihuacan (1967, 43). If, as seems likely, there was an emperor or even a regional state ruler in Teotihuacan, then this was probably where he lived and worked.

The Great Compound, across the road from the Citadel, is thought by Millon to have been the central market of the city. Today it is covered by a modern parking lot, tourist shops, a museum, and a restaurant. Thus this complex continues to function somewhat as it did in ancient times. The compound is the largest in the city, reflecting its importance. Millon notes that apartment compounds are to be found around the Great Compound and suggests that the second level of society was housed in these residences. On the other hand, if the elite was as despotic and militaristic as seems likely, then the Great Compound might have served as a barracks.

Referring to map 6-2, one sees at least twenty “lesser” temples oriented around small courtyards in groups of three. A particularly large set of three is on the west side of the Street of the Dead, between the Pyramid of the Sun and the Citadel (Rattray 2001, 365). Many of these are along the Street of the Dead, with its more than seventy-five temples. Smaller courtyard groups are also found in other parts of the city. There are often low platforms in the patios and courtyards that served as places for public ritual and dances. These dances were not simple entertainment. A mural from Atetelco apartment compound shows gaily clad but armed warriors whose dance steps are diagramed by footprints on the platform floor in true Fred Astaire style. More soberingly, these warriors carry elaborate curved knives on the ends of which are stuck bleeding human hearts.

Murals and models found at Teotihuacan depict temples as single-story and highly decorated with feathers, paintings, and cloth on the walls and roofs. A mural fragment depicts such a small temple sitting by a road on a single-terrace, *talud-tablero* platform. All such contemporary depictions of temples show what are apparently wooden armatures on the roofs, supporting feathers and other decoration (see reconstruction of Zacuala in Sejourne 1966, fig. 28). The green feathers waving and swaying in the breeze perhaps symbolized the bright green corn leaves stirred by the wind in the vast fields around the city.

If they followed what seems to be a common Mesoamerican pattern of the time, these temple groups were dedicated to gods associated with specific kinship groups. Excavations in such buildings should produce the remains of tombs with ancestral burials in them if this was the case. Indeed, founders’ burials may be associated with the construction of many apartment compounds, as in the case of Xolalpan (Rene Millon 1981). However, it also seems certain that the greatest of these temples attracted worshipers from outside the city. The remains of offerings from other parts of Mesoamerica have been found at Teotihuacan. Pilgrimages from these far-flung places, as well as those from the basin and other nearby places, no doubt provided people with some of the desired means of ideological identification with the city. Millon argues that such an identification was needed to provide an incentive besides force and economics to build and maintain such a highly structured city and society.

Palaces. The famous Quetzalpapalotl (Quetzal Bird—Butterfly) Palace is incompletely excavated but still shows the magnificence in which the elite lived. A set of deep porches leads to a central courtyard that is surrounded by an arcade and three large rooms. This part is altogether unsuitable for habitation and seems to have been an administrative audience area. The rear of the audience area gives onto several room clusters that were for living purposes. These rooms are similar to those found in the not-so-elaborate apartment compounds. The Quetzalpapalotl Palace is located on the edge

of the courtyard in front of the Pyramid of the Moon and therefore is probably one of the most important and elaborate of such structures. If this palace is more or less typical, however, the pattern of porches giving access to an audience area with adjacent and secluded living quarters may be repeated elsewhere in the city. Certainly, these palace buildings are distinguished from the apartment structures by larger size, greater complexity, and special features not found in other residences (Acosta 1964a).

Apartment Compounds. Of the twenty-six hundred known buildings in Teotihuacan recorded by the mapping project, over two thousand of them are apartment compounds. As of 2004, only twenty-five or thirty of these had been even partially excavated. Many more have been clandestinely looted. These buildings are highly consistent in general pattern but highly varied in detail. Clusters of rooms are arranged around several patios, and a common outer wall surrounds the whole maze. The structures are arranged on a grid system of street that averages about 60 meters (197 feet) on a side. However, both the grid and the sizes of the houses are variable. The latter vary from 625 to over 6,000 square meters (6,727 to 64,584 square feet) in extent. There are probably a few larger and smaller examples. Millon estimates that about one hundred people lived in the largest compounds and about twenty in the smallest. From these figures, he estimates the total population at about A.D. 600 as at least 75,000 and perhaps more than 200,000, with a mean figure of 125,000 (Rene Millon 1970, 1080; 1992, 344).

There is no doubt that these buildings were residential (fig. 6-5). Each apartment seems to have had its own kitchen, within which have been found cooking places and large amounts of cooking, serving, and storage pottery. Most cooking was apparently done on three-prong braziers (similar to those used for cooking at nearby Chalcatzingo about 700 B.C.). Sufficiently careful excavations to detect such evidence have been made in only a few cases. The apartment compound named Tetitla perhaps had a cistern for rainwater storage that was fed by roof drains, according to Laurette Sejourné (1966). However, the evidence is puzzling and not at all certain. There were also sanitary facilities in the forms of patios or blind alleys, where the results of visits were available to turkey buzzards. Fortunately, the high altitude and strong sunlight helped promote rapid sterilization of effluents. Below-floor drains carried the rains away from the patios and into the streets. However, these public-health facilities ultimately did not suffice in the sixth century, when six of every ten infants and children died before adulthood (Storey 1992).

Each apartment compound varies in number of rooms and patios, but most have at least fifty, Tetitla has over one hundred, and Tlamimilolpa has an estimated three hundred. All apartment houses thus far excavated have their own temple or shrines. In many ways the apartment houses



Fig. 6-5. View of a courtyard in an apartment building at Teotihuacan. Note the typical “pudding” of mortar and stone covered with heavy plaster. More than two thousand of these labyrinthine residences are to be found in the city.

were self-contained units. Even burials, presumably of former inhabitants, were made inside the structures. Not all were buried in this way, however, as cremation seems to have been a favored means of disposal of the dead.

Tlamimilolpa is apparently an apartment structure, but it is more extensive than most and without discernible outer walls. Its rooms are smaller, but its plan and orientation conform to the standards of the compounds along the Street of the Dead. According to recent excavations by Evelyn Rattray (2001), Tlamimilolpa went through three phases of construction, beginning about A.D. 300. The earliest-phase building materials were mainly adobe and mud, possibly indicating a relatively low status for the inhabitants. However, there is a possible founder's burial that was well made and full of fine pottery. Over twelve hundred artifacts were placed in this tomb, and the body had been cremated in place. By A.D. 400 the fortunes of the group in the compound had markedly improved, and they rebuilt

it with the higher-quality concrete materials used in most other compounds. It is possible that the inhabitants were porters and warehousemen for the nearby Merchants Barrio. However, they may have also been craftsmen engaged in the manufacture of fine textiles and processing of cinnabar for export that was done in the Merchant's Barrio (Rattray 1987; Iceland 1989).

The social groups occupying these compounds were probably a form of kinship unit that traced descent from both the mother's and the father's lines, but with a bias toward the father's line. Michael Spence's studies of skeletal materials from apartment compound La Ventilla B showed that the males were genetically more closely linked than the females buried there (Rene Millon 1981).

Millon writes of these buildings: "The residential areas of Teotihuacan must have presented a somewhat forbidding aspect from the outside; high windowless walls facing on narrow streets. Within the buildings, however, the occupants were assured of privacy. Each patio had its own drainage system; each admitted light and air to the surrounding apartments; each made it possible for the inhabitants to be out of doors yet alone" (1967, 43). Millon has also commented on the defensive nature of these structures. It is worth noting that some scholars believe that the structures provided a far higher quality of housing for most of the city's populace than that available in the valley since the Spanish Conquest (Sanders 1965).

Summary. Obviously, our classifications of palaces, apartment houses, and so forth are somewhat artificial separations. The city grew organically, and the functions of buildings overlapped and melded into one another. For example, consider the great double palace wrapped around the temple in the Citadel; the fact that apartment houses have their own temples and shrines; palaces that combine many functions, even as sumptuous burial places; some apartment compounds that are nearly palaces in elegance and appointments; and the Great Market, which was probably involved with religious activities as well. The Tlamimilolpa compound group seems to have been underprivileged in its earlier phase. However, the fortunes of the kinship unit occupying it later shifted for the better. Barrio divisions are clear, with status differences within each city ward as well as between them. Each of these neighborhoods had its own temple center.

Art and Religion

No one source gives us as much information about the Teotihuacano and their lives as the brilliant murals to be found on the interior walls in practically every building of the city. As sculpture and modeling were preferred by the Maya for architectural decoration, so mural painting was at Teotihuacan. H. B. Nicholson notes that Teotihuacan sculpture is cubistic, massive, and stylized (1971b). It is typified by the giant and blocky sculpture outside the National Museum of Anthropology in Mexico City. Sculpture found

within the city of Teotihuacan itself can be viewed in the form of the bas-relief columns of the Palace of Quetzalpapalotl. Here, repetitive and unexciting depictions of quetzal birds and butterflies are worked into intricate patterns. More realistic renditions of human skulls and a few other subjects show more imagination. However, whatever their stone sculpture lacked in vitality, the Teotihuacano made up for in their mural art. Over 350 examples of painting are known from only 13 locations. Because there are over 2,600 buildings in Teotihuacan and most are as yet unexcavated, there must be an unparalleled treasury of art still unrevealed.

Clara Millon (1972, 1973), Esther Pasztory (1974, 1997), George Kubler (1967), and Kubler's student, Arthur Miller (1973) have made the principal studies of mural art. According to Kubler, there are at least forty-five images of life-forms in the painting, and these are far surpassed by the number of geometric and stylized motifs. There are also about fifty elements that are probably glyphs. Kubler characterizes Teotihuacan murals as being strongly liturgical, especially in the early phases; that is, there are repetitions of religious symbols and graphic obeisances arranged in a kind of polychrome litany.

The liturgical murals fall into five thematic clusters, which probably correspond to specific religious cults. The Storm God Cluster is the most common (fig. 6-6). An example of this is the speech scroll of the singing priest of the Maguey Mural. In the scroll are richly various signs for water, and the scrolls' edges are trimmed with a storm-god headdress, a serpent's eye, and a possible lightning symbol. Avatars and variable manifestations of the rain god occur in the forms of feathered serpents (recall the Citadel Temple), starfish, jaguars, flowers, and warriors.

In an extraordinary tour de force, the porticos of the three temples in Atetelco apartment house are covered from floor to ceiling with the life-giving figures of the storm god. The human face in the storm-god costume is replaced by coyote and eagle heads in some murals, while water-drooling jaguars prowl at the bases of the walls. The storm god in a full front view is shown at Tetitla with water flowing from his hands (Lothrop 1964). Symbolically, within the water streams are pieces of jade, human heads, animal heads, and perhaps grains of corn.

In the fascinating Paradise Mural from Tepantitla, the storm god, grasping rain-god dolls, presides over a scene that A. Caso (1942) has interpreted as a depiction of Tlalocan, the afterworld of the rain god. A great waterspout gushes upward in the center of the mural, spewing people into paradise. The spout seems to result from two rivers flowing from springs guarded by jaguars in the corners of the mural. Interestingly, the rivers are bordered by neatly divided and irrigated fields. Paradise is indeed a happy place, and speech and song scrolls issue from the many that have arrived. One man is so happy to be there that he weeps and makes a magnificent utterance,



Fig. 6–6. Mural from an apartment compound at Zacuala, Teotihuacan, showing one of the versions of Tlaloc, the rain god. In this case the god or an impersonator stands in full front position with a large feathered hat. From his hands flow a number of beneficial and desirable items: food, pottery, and seashells, among others.

judging by the ornate speech scroll issuing from his mouth. The storm god's goggle-eyed butterflies flit through the scene, which shows humans engaged in games and other pursuits. This promised afterlife no doubt gave the Teotihuacan priesthood a powerful moral and psychological tool to use for social control.

This unitary view of the “storm” figures has been challenged by E. Pasztory (1974), who thinks that several gods are represented by these figures, a view that now is widely accepted. She also has expanded on the theme of an important female deity, one that enthusiasts have called the Great Goddess, the goddess being seen as the primary deity of Teotihuacan. Supporters of such an idea are apparently inspired by the similar promotion of an interpretation of southeastern European religion as dominated by the Mother Goddess cult and by the application of feminist principles to the data (cf. Berlo 1992b). There are female deities to be sure, and one depiction is probably the great, blocky sculpture (mentioned above) that is now outside the National Museum of Anthropology. However, there is little objective evidence to support the expansion of this suggestion, as Pasztory, herself an advocate of the Goddess, admits (1997, 85–94).



Fig. 6-7. A jaguar blows a trumpet from which drops of water fall in a mural from an interior structure at Teotihuacan. Starfish and feathered headdress (?) designs frame the scene.

The Butterfly Cluster of themes is often found on incense burners used in funeral rites, suggesting that the butterfly may be a symbol for the soul. Owls, darts, and shields are members of a third complex and are probably the symbols of war. Kubler suggests that the combination of owl and quetzal birds in the Quetzalpapalotl Palace designate a specific dynasty and its association with war. It is worth recalling that the Maya glyph for the Teotihuacano at Tikal is a hand with a spear-thrower.

A fourth complex of paintings centers around the depiction of a cult object and its worshipers. In a mural discovered in 1889 in the Temple of Agriculture and since destroyed, chanting worshipers look at two smoking altars, which they offer pottery, a quail (?), food, and bundles of what may be incense. Cremation was one way to dispose of the dead, and this scene may show just that sort of funeral with the symbols of the presiding deity.

The fifth cluster of themes is grouped around rain, groundwater, lightning, and fire. In many scenes jaguars, symbols of the underworld, prowl, blowing shell trumpets that drip water and produce thunderous sounds, as indicated by noise scrolls (fig. 6-7).

Changes through time in mural subject matter and style indicate both changes in basic cultural values and more subtle aesthetic trends. Clara

Millon's important work has been oriented toward these historical matters, as contrasted to Kubler's essentially synchronic approach. Millon has sorted the trends in painting into six major periods (1972). Specific qualities that persist through all periods include (1) a use of flat colors, (2) a general absence of spatial depth, and (3) a prohibition against portrayal of human sexual characteristics.

Period 1 painting seems to have been largely supplementary to sculpture, which was more important than painting early in the city's history. A few supplementary depictions on the early Feathered Serpent Temple typify this art.

Period 2 murals include the Mythological Animals painting and paintings from the Superposed Structures building. The general characteristics are small bodies combined with large heads, increased polychromy, and complexity of composition.

In Period 3 a more monumental style was developed, the giant jaguars painted on exterior walls of the Street of the Dead being good examples. Much experimentation in style is in evidence, indicating that many painters were at work in a period of canonical flux. Millon comments that "among the paintings we find artistic disasters and magnificent successes" (1972, 9).

Period 4 has a fully developed art style with a realized potential. The famous Tepantitla Tlalocan (storm god's paradise) mural is from this period, as is the sequence of "kneeling jaguars" at the Tetitla apartment compound. Millon sees Maya and Zapotec influences in the Tetitla paintings. Again, the style is rich and varied, but it is tied together in its concern with the transcendental. Brilliant polychromy is characteristic.

Period 5 painting is distinguished by the trend toward painting almost entirely in tones of red. The netted design in the Atetelco white courtyard (Patio Blanco) is an example of one thematic development. Millon (1973) has recently interpreted a motif from this mural and others as representing temporal and sacred power combined. This grapheme is a tassel attached to a *tablero*. As will be seen, this tassel motif is also used as the symbol for Teotihuacan in Monte Alban.

Period 6, the final period, seems to feature a narrower color range than the preceding periods. The upper painting of the Quetzalpapalotl Palace exemplifies this period. Ornateness and simplicity exist side by side, continuing the divergent traditions established long in the past.

In my opinion there may be a distinct shift in cultural values through time reflected in these thematic changes. From an emphasis on the exaltation of nature, the Teotihuacanos, late in their history, shifted to a glorification of warriors and rulers. As noted above, Teotihuacan religion seems to have been strongly animistic in its earliest phases and then to have moved to a focus on humanized deities and even deified humans. The Mural of the

Mythological Animals is thought by Clara Millon (1972) to represent the myth of cyclical creation and destruction and is early in date. Another example of this earliest cosmology is on a decorated pot found at Las Colinas, Tlaxcala, but probably made in Teotihuacan. In a fascinating analysis, Hasso von Winning demonstrates that the figures on the pot represent the storm god in four aspects: as serpent, coyote, quetzal bird, and water. The four may symbolize the four kinds of rain associated with the four world directions (von Winning 1961). Later murals show armed figures with spear-throwers, darts, and shields and even depict symbols of human sacrifice.

The presence of a writing system is increasingly reflected in the murals and paintings as they are found in the city. A series of military leaders seems to be named in one group of looted murals (Clara Millon 1973), while the murals recovered in the 1980s from the zone east of the Pyramid of the Moon (the Barrio of the Looted Murals) show still further evidence of personal-name or title glyphs (Berrin 1988). Recent finds by Rubén Cabrera Castro in the La Ventilla apartment compound also seem to show name glyphs, whether of people or gods is unknown. All of these finds hint at the possibility of writing or at least a kind of mnemonic and hieroglyphic notation system, though there is no evidence thus far of a fully developed script. Research that has been done on Teotihuacan writing to date is hampered by a lack of much data and uncertainty over the language spoken by the people of the city. An assumption once was widely accepted that Nahuatl (the Aztec language) or an early form of it was spoken, but there now seems to be a consensus that the language, whatever it was, was not Nahuatl.

Teotihuacan Society

From settlement pattern data that show differences in housing, we can recover something of the structure of Teotihuacan society. Supplemented by depictive data and information from artifacts, a surprisingly detailed picture emerges. Evidence for occupational specialization indicates considerably more than just a two-part stratification—rulers and ruled. Rene Millon (1981, 214) has defined at least six social classes. In spite of this, at present we can see only the outlines of the fully developed and sophisticated system in the latest period and the earlier periods are even hazier. The correctness of the following survey of social classes depends on the accuracy of the functional interpretations that we have made of the various city structures, murals, artifacts, and other information.

Farmers. The support of the more than 125,000 people living in Teotihuacan about A.D. 600 was based on farmers who lived both in the city and in nearby communities. It also depended on tribute from satellite cities and on the control of large zones of the central plateau. The huge market in Teotihuacan was the redistribution mechanism for the urban center. Farmers living in the apartment houses and small shacklike houses managed

the surrounding irrigated farmlands shown in the murals. Rural towns such as Maquixco provided specialized agricultural products. Satellite cities such as Cholula must have also contributed foodstuffs and acted as regional collectors in the immemorial way.

Maquixco (technically known as site TC-8) is located on the northern slopes of the Teotihuacan Valley, a few kilometers west of the city. It is in the piedmont zone and therefore in an area of poorer soil and less water than the valley-bottom settlements. This rural community consists of about fifteen houses similar to the Yayahuala apartment complex in the city. The apartments of Maquixco are quite different in detail from those in the city, however. The building materials are inferior, being mainly of adobe as contrasted to the concrete of the urban dwellings. Apartments are smaller, and there are fewer rooms within each building: twelve to fifteen versus the fifty to more than one hundred rooms in most of the urban houses. At Maquixco, because there is a much greater expanse of vacant terrain, a grid plan is lacking and, instead, the apartment compounds are grouped around plazas. Murals at Maquixco are uniformly dull geometrics, lacking the lively, variable forms of city art. Five to six hundred people lived at Maquixco at its height (Sanders 1965).

Today, the area is exploited for the production of maguey (century-plant cactus), which provides fiber and pulque to the region. Beans are another important crop. Maquixco performed the same functions from about A.D. 400 to 600. Special obsidian blades used for processing maguey are found in large numbers over the site. The fat god, the god of pulque, is the most common type of figurine in the village. Maquixco produced very little else for itself, however. Pottery and obsidian and other stone tools are identical to those found in the city and were undoubtedly made there. In other words, the town was firmly tied into a trade network and probably marketed its products in the central market of the city, exchanging them for obsidian, utility as well as fine ceramics, stone corn grinders, and other necessities. Undoubtedly, Maquixco also depended on the city for religious reassurance in its agricultural activities (Sanders 1965). A mural, now unfortunately in the Cleveland Museum, shows a singing priest striding over a nicely cultivated field into which are stuck unmistakable maguey leaves. A spiny crocodile-serpent, symbol of the earth, frames the scene.

Maquixco may be typical of the towns of the near hinterland that were tied into the subsistence base of the city. There were relatively few of these communities during the great period of Teotihuacan. Jeffrey Parsons's surveys (1968, 1974) of the eastern and southern basin have shown that most of it was thinly populated during this time. The implication is that most of the people were congregated in the city.

It has been suggested that *chinampa* agriculture was developed at this early date and helped to support the city. P. Armillas's work (1971) has



Fig. 6-8. Luxury pottery ornamented with a "serpent's eye" design from Teotihuacan. This pot once stood on three cylindrical legs, now broken off. The motif is one of the glyphlike elements in Teotihuacan art.

shown that the great period of *chinampa* farming came when water in the lakes fell to relatively shallow levels in the Postclassic period. However, the *chinampa* technique was certainly instituted during this period. The area just outside the southwest part of the city as well as parts of the lakes in the southern valley seem to have been so exploited.

Craft Specialists. Although most of the farmers lived either in the city or in small farming villages like Maquixco, perhaps 5 to 10 percent of the city's population, thousands of people, were craft specialists. Rene Millon and his colleagues found a tendency for people living in the same compound to engage in the same occupation. They also found over five hundred workshops, the vast majority of which were obsidian workshops. Some considerable doubt exists as to whether all of the obsidian surface finds represent real full-time craft zones.

Other specialized craftsmen made other stone items such as the famous stone masks, while still others manufactured elaborated and exquisite pottery (fig. 6-8). Stuccoed, slab-footed tripod vessels were a Teotihuacan specialty, as distinctive as Wedgwood pottery. Much utilitarian pottery was also made (fig. 6-9). The murals indicate that there were also couturiers, who fabricated the elaborately feathered and bedizened elite costumes. Leather sandals



Fig. 6–9. Red on brown pottery, of a highly standardized form and decoration, from Teotihuacan. Probably used for food service, this type was mass produced and traded widely.

for the elite and probably woven grass sandals were made. The huge amount of formal architecture and some specialized tools indicate that there were full-time masons, plasterers, quarrymen, and other construction-trades workers. Painters of murals were certainly a specialist class. As with the Lowland Maya, painters had to command not only technical aspects of fresco painting, but also the sophisticated iconography that gave meaning to their efforts.

As has been done for the Classic Maya, one could construct a complicated and stratified model of these specialties. The most prestigious presumably would be those involving arcane knowledge largely shared with and derived from the elite classes. If this were the case, then the construction trades and common-implements crafts were probably the least prestigious. Producers of luxury and sumptuary items with ritual significance such as the stucco-coated tripod ceramic bowls and the sophisticated murals would have been highest on the craftsman's social scale.

Presumably there were also merchant-craftsmen who dealt with the transactions of the city's marketplace. Long-distance merchants handled the transport and exchange of goods to far-off areas. These antecedents of the Aztec *pochteca* class were probably of higher status than the resident craftsmen

merchants. G. L. Cowgill, on the other hand, scoffs at the notion of a vast Teotihuacan trading empire (2000, 289), arguing that the prestige of the great city was causing other cultures to imitate its art and other symbolism.

If we make analogies to the earliest cities of Mesopotamia and the proto-historic cities of Mesoamerica, we find that there was probably a group of specialties that were the province of a bureaucracy. These civil servants may also have been the elite, but they were ranked according to their responsibilities. Teotihuacan had a more complex arrangement and was larger than the later Aztec capital, although Tenochtitlan may have had more people. It is therefore unlikely that Teotihuacan was any less complex in social organization. W. T. Sanders (1965) has suggested that kinship units consisting of groups of related families or lineages lived in the apartment compounds. This arrangement is analogous to that of the “small ward” (*barrio pequeño*) of the Aztec, which was probably the residential area of a lineage. Therefore, patrilineal clans or similar units may have existed and performed the functions that they did later for the Aztec. The alternative is that of Susan D. Gillespie’s (2000) “Houses”—social and residential groups masquerading as kinship units. Social organization and kinship structure are probably the most conservative parts of human culture, aside from the values that produce them. Assuming that the Aztec-period peoples inherited much of their cultural apparatus from Teotihuacan, it may also be that social forms came from this period.

Foreigners in the City. One of the most interesting findings from the work of Rene Millon and his colleagues was the presence of at least two barrios set aside for foreigners. One zone was apparently occupied by people from Oaxaca. Excavations in this ward on the western edge of the city produced one genuine Oaxacan-style tomb, which had been looted. However, the ancient tomb robbers had left in place a stela carved with an Oaxacan glyph. Bones of several individuals suggest that the tomb may have been a crypt reopened from time to time for burial of a newly deceased person. In addition two Monte Alban-style funerary urns were found in other nearby excavations.

The Merchants Barrio was so named by Millon because of the high percentage of foreign pottery found in it, much of it from the Gulf Coast and the Maya Lowlands. Rattray (1987; 2001, 389) later excavated it and found that the barrio dated from about A.D. 400 and was composed of at least twenty round houses. Tens of thousands of obsidian blades were found, at least some of which were used in the processing of cinnabar (Iceland 1989). Other pigments were also ground in the barrio. Fine weaving implements for the production of cloth were another common artifact, and bark paper was also made there. Some 15 percent of the ceramics were Gulf Coast and Early Classic Maya, mainly of fine wares. Rattray suggests that this barrio housed people from the origin zones of the pottery and that they

were merchants importing feathers, cotton, and cinnabar. The former two were important as materials for warrior uniforms. Although the form of the houses in the barrio changed through time to conform with the Teotihuacan norms, the zone was occupied by foreigners until about A.D. 650.

One implication is that Teotihuacan supplemented the income from its tributary areas by long-distance trade with Oaxaca, the Veracruz Lowlands, and the Maya Lowlands. The nearer Huastec area may have been represented by a resident group of people in the city, as evidenced by a round temple in the city's northwest section. The wind-god cult and its round temples were particularly strong in the Huastec region to the northeast.

Teotihuacan Elite. Elite-class specialties included religion, politics, and warfare. As indicated above, long-distance trade may also have been an elite activity.

Although formal religion had changed in response to other cultural evolution, it began as animism and ended as a complex religion with great similarities to that of Aztec times. That is, the latest manifestations of Teotihuacan cosmologies and ritual practices seem to glorify humans who were historical personalities and who were eventually identified with the supernatural. Among the thousands of figurines produced through the several hundred years of the city's life are depictions of gods or godlike humans known from later times. The flayed god (Xipe), the rain god (Tlaloc), the feathered serpent (Quetzalcoatl), and the fire god (Xiuhtecuhtli) or their earlier forms were all present. Sanders (1970) argues that the same association of religion with warfare and ritual cannibalism was present in the final stages of Teotihuacan as in Aztec times. Maquixco, for example, produced large quantities of split and splintered human bone fragments in general garbage and trash heaps, indicating that humans were being used for food during the A.D. 400–600 period. The murals showing human hearts brandished by Teotihuacan warriors also suggest this. Jaguar and eagle deities shown in late Teotihuacan murals were later Toltec and Aztec warrior-society patrons. Large numbers of projectile points are found in late Teotihuacan debris at Maquixco. All of this may add up to a picture of an aggressive Teotihuacan, able to move against its neighbors with military force partially rationalized by a religious ideology that not only sanctioned but demanded human sacrifice (Sugiyama 1989).

Among other motivations for aggressive warfare was the one familiar in our own day—that of the demands of a large and growing population. Conquered areas could be made to yield valuable tribute of food. The role of the warrior became increasingly important to Teotihuacan, and Rene Millon (1988) thinks that a powerful military organization existed by the beginning of Teotihuacan's rise. Teotihuacan had the organizational jump on most Mesoamerican cultures during its first centuries, but as time went on the gap narrowed, and the great city finally came into peril.

Teotihuacan and the Rest of Mesoamerica: Empire or Alliances?

Ignacio Bernal (1965a) suggests that Teotihuacan was an empire along lines initially invented by the Olmec. He distinguishes between the metropolitan culture of Teotihuacan and Teotihuacan influences found in regional cultures. The distribution of metropolitan culture, as defined above, certainly includes the Valleys of Mexico and Puebla, and possibly the Valleys of Toluca and Morelos. One other large city within this metropolitan zone was Cholula.

Cholula, in the Valley of Puebla, is pitifully little known, considering its pre-Hispanic importance and the size of the site and in spite of forty years of intermittent excavation. From nearly any point in the valley one can see the vast bulk of the great pyramid glowering over the small provincial town that now occupies the site. Most investigations have concentrated on the pyramid. Tunnels into the structure have revealed some earlier pyramids dating from the Teotihuacan period. These earlier platforms have *talud-tablero* features. Painted in the panels around the terraces are various polychromed motifs: black, red, and blue stripes with seashells; insects that may be a Cholulan version of the sacred butterflies of Teotihuacan; and geometrics.

Some extraordinary murals were discovered in 1965 painted on the panels of a Teotihuacan-style structure adjacent to the inner pyramid. These are the so-called Drunkard Murals (Marquina 1971). Groups of rather elastically formed persons vigorously enjoy themselves drinking cupsful of what is probably pulque. These people roister, gesture, and pour pulque from jugs into larger jugs while dogs run and bark. All in all, the scene gives the impression of a carefree gaiety unusual in somber central Mexico. I. Marquina suggests that the scene is that of a harvest or planting celebration like those described by Sahagún.

Other examples of Teotihuacan-style architecture have been discovered at some distance from the main pyramid group. Clearly, during Teotihuacan times Cholula was not the major center that it was later. The great pyramid had not yet been built. The area of its location was occupied by a group of Teotihuacan-style buildings. What sort of a settlement surrounded those buildings is yet unknown, in spite of the thorough work of the German Puebla Scientific Mission. Teotihuacan-period pottery is quite standard in style and was probably locally made.

Beyond the central plateau area, there is evidence of strong regional cultures that were more or less influenced by Teotihuacan. For example, two stelae, carved in Teotihuacan style and depicting male and female rain gods, have been found in northern Guerrero on a route that leads to the Balsas River (Díaz Oyarzabal 1986). Using the model of protohistoric empires, we find it likely that any empire built by Teotihuacan had large geographic holes in it. That is, there were undoubtedly zones in Mesoamerica only controlled by alliance, intimidation, or isolation, with only the most

crucial zones and routes physically occupied and controlled by Teotihuacan. Patterns of Teotihuacan's influence and control indicate that it fits the classic model of empire in many areas of the world and, more to the point, so does the Aztec case. An examination of the most important cases in point will demonstrate this analogy.

Maya Highlands: Kaminaljuyu. Sanders's work at Kaminaljuyu shows a dramatic change about A.D. 300 from the scattered plaza settlement pattern we have seen in the Late Formative (Sanders and Michels 1969). The lineage temple groups were abandoned. Teotihuacan presence is marked by a shift to a single massive acropolis in Teotihuacan style (Kidder, Jennings, and Shook 1946; Sanders and Michels 1977). *Talud-tablero* temples, oriented about closed courtyards, were built in adobe. Frontal platforms on these temples concealed and protected successive elaborate tombs. Within the tombs are masses of pottery, carved bone, and other materials, much of which is clearly within the stylistic canons used at Teotihuacan itself. Stuccoed, slab-footed tripods, with scenes featuring the storm god, and Thin Orange effigy vessels are examples of items exported to Kaminaljuyu from Teotihuacan. However, much of the painting on the stuccoed tripod is in Maya style, and studies by Jacinto Quirarte (1977) have shown that many of the tripods themselves were manufactured in the Maya Highlands. In other words, Maya craftsmen at Kaminaljuyu made their own versions of the tripods and exported them back to Teotihuacan.

The strength of Teotihuacan influence at Kaminaljuyu was so strong that A. V. Kidder, Sr., who dug out the famous tombs, suggested that it is an example of a military takeover by Teotihuacano and the subsequent exploitation of a native population (Kidder, Jennings, and Shook 1946). This idea fits the later pattern of military takeover of the Maya Highlands by small Mexican groups who established ruling houses in Late Postclassic times. All evidence tends to confirm this interpretation of military colonization.

The size of Kaminaljuyu was about 243 hectares (600 acres), and the population in and around the center was at least ten thousand. The limitations on any archaeological work in the zone now make it impossible for us to know the true extent of the center during this period. Rural population also increased at about this time. By about A.D. 500 three subordinate towns had been established along the route between Kaminaljuyu and the south coastal plain of Guatemala, a distance of only 16 kilometers (25 miles).

Coastal Guatemala: Cotzumalhuapa, the Middle and Late Classic. The Pacific coastal plain was in contact with the Olmec in earlier times. Later, it was also an important zone to the Aztec because of its cacao (chocolate) bean production. Modern bulldozing operations on the coast have destroyed dozens of mounds and uncovered immense quantities of Teotihuacan-influenced pottery (E. Shook, pers. comm. 1972). Most of this pottery is made of a local ware called Tiquisate ware, which has also been found in

Teotihuacan itself. Many Teotihuacan-style incense burners have been found by skin divers in Amatitlan Lake, less than ten miles from Kaminaljuyu.

Sanders and Barbara Price (1968) say that the motivation for a Teotihuacan takeover of Kaminaljuyu was control of the coastal plain and the trade route out to the Maya Lowlands. Kaminaljuyu evidently acted as a major outpost of Teotihuacan power and had connections with the important center of Tazumal in El Salvador as well as with Tikal and other Maya Lowland centers to the north. Teotihuacan undoubtedly extracted more than just chocolate beans from the Maya area. For one thing, the Pacific coastal zone produces high-quality cotton today and may have done so in the past. The attractive native brown cotton grows in the highlands as well. Manufactured goods of great variety could have been exported from the Maya area, including high-prestige items such as green quetzal feathers.

The present explanations of the nature of Teotihuacan influence in both the highlands and the adjacent coastal zones are clearly inadequate. Investigations in progress and unpublished data indicate a much more complex situation, and no new consensus has been reached yet on this important question (Marion Hatch, pers. comm. 1988).

Around the present-day town of Santa Lucía Cotzumalhuapa are a number of ancient regional centers, including Bilbao, El Castillo, and El Baúl. El Baúl was occupied at least as early as Late Formative times, and handsome examples of sculpture have been found there that are contemporary with but distinct from that of Izapa. El Baúl Stela 1 dates to either A.D. 11 or 37. Later sculpture at the three sites has been interpreted in terms of two different models.

Parsons and Stephen Borhegyi worked for some time at Bilbao, and Parsons (1967–69) has developed the concept of the Middle Classic. Briefly, he thinks that the period of Teotihuacan influence over all of Mesoamerica was so pervasive that a separate time period should be set aside for it. The Middle Classic period was thus one of rapid and widespread distribution of Teotihuacan ceramics and other cultural forms. It lasted from A.D. 400 to 700 and is divided into two phases. The earliest phase (A.D. 400–550) was that of the establishment of commercial and military colonies throughout Mesoamerica. In Parsons's view, Bilbao was one of those colonies. The last phase (A.D. 550–700) was the period during which Teotihuacan influence was assimilated into the regional art styles and new styles were synthesized. At this period the great city's outposts abandoned their ties with it and became independent.

Parsons sees the art of the Cotzumalhuapa region as resulting from the above process. In his view, if Teotihuacan controlled the Cotzumalhuapan region, it was probably through a group from Tajín, which was either an ally or under the domination of Teotihuacan at this time. Even in terms of Mesoamerican art, the style is somewhat bizarre and unrelieved by much

aesthetic merit. Subject matter falls into narrative and portrait categories. Human busts, full seated human figures, and very large heads make up the second category. Stiff, awkwardly portrayed people engage in the sacred ball game, human sacrifice in a multitude of forms, and various symbolic acts such as climbing ladders and offering human hearts to a diving figure that is probably the sun. A preoccupation with death is pervasive, and there are many death's heads and skeletal figures. Many of the large scenes are carved on gigantic boulders, and among the figures twine vines on which are human heads, birds, and leaves. The art style, the ball-game scenes, and the game equipment (stone yokes, thin stone heads, and "*palmas*") all link the Cotzumalhuapa style to that of Tajín according to Parsons's interpretation.

Marion Hatch (1987) has developed a more economical and more convincing reconstruction based on more precise dating and the historical approach to Mesoamerican art. The ceramics associated with the Cotzumalhuapan style are now known to be Late Classic. Further, the carbon 14 date depended on most heavily by Parsons can also be interpreted as Late Classic. Repetitions in the subject matter of the boulders and stela-type stones at the three sites of Bilbao, Castillo, and El Baúl lead to an interpretation in which three governors can be identified by costume and glyphs. Each sequence of scenes shows each governor as he ascends to power and receives symbols of authority and as other legitimizing events occur. Each person is also associated with symbols of special kinds. Governor 2, for example, was apparently greatly involved in human sacrifice and death. Governor 3 seems to have been more interested in matters associated with the sacred ball game. Hatch thinks that the time span represented by the sculptures is no more than one hundred years and falls into the early part of the Late Classic. Continuities in sculptural symbolism and style occur between early El Baúl Stela 1 and the later Cotzumalhuapan style. This indicates to Hatch a strong regional culture that underwent various permutations and transformations and is probably the originator of both the Formative and Late Classic sculptures. Finally, it should be noted that there are examples of Cotzumalhuapan sculptures known from the adjacent highlands (Valley of Almolonga; Hatch, pers. comm. 1988).

Today the zone around Cotzumalhuapa is occupied by sugarcane fields and coffee plantations. The Pacific coastal plain is hot and sticky, and the vegetation is a dense, intense green. One is always in sight of the huge volcanoes of the nearby highlands. At Bilbao one plunges into the shady coffee groves and walks on soft, damp, springy earth, accompanied by the constant sound of small streams. Two storm-god figures carved from a boulder nestle in the mossy bank of a stream at Bilbao. The huge boulder sculptures with their grotesque figures rest on the terraced zones among the earthen mounds of the ceremonial center. Altogether, it is a fascinating,

repellent, and exotic place for either Mesoamerican highlanders or modern travelers. The coastal sculptural style and hieroglyphic system are distinct from either that of the Maya Lowlands or the Mexican Highlands. Cotzumalhuapan culture is an excellent example of the sort of regional cultural development that took place over and over again in Mesoamerican prehistory.

Maya Lowlands: Tikal, Uaxactun, Becan, Rio Azul. The facts, nature, and interpretations of the relationships of Teotihuacan with the Classic Maya are dealt with in detail in the preceding chapter. To briefly recapitulate, Teotihuacan apparently established commercial ties with several parts of the Maya Lowlands in the fourth century A.D., including the salt zones of the northwest peninsula and Tikal in the south central region. By about A.D. 378, an alliance or a takeover of Tikal and its regional state was engineered by Teotihuacan. This was done through a collaborationist ruler at Tikal who apparently had military and political advisors from Teotihuacan. Uaxactun was in Tikal's orbit by this time, and Rio Azul was conquered. The fortress of Becan apparently fell under Teotihuacan control at about the same time, although it is not certain what connection it may have had with Tikal. It may have been simply a fortified redoubt on the cross-peninsula trade route leading from the Gulf of Mexico to the Caribbean. The Holmul warrior paintings discovered by Francisco Estrada Belli lend credence to the importance and military nature of Teotihuacan in the lowlands.

The Teotihuacanos probably exercised an influence out of proportion to their numbers, bringing ideas, statecraft, and sophistication in military and political matters which caused an initial shock to Maya society and then something of a transformation. In other words, the Teotihuacan groups and their legacies may have been the stimuli by which the Lowland Maya continued their evolution toward centralized and urbanized states. W. R. Coe (1965b, 35–37) sees the Tikal evidence as also reflecting a later Teotihuacan period, one that may have been more tied to Gulf Coast variants of this culture than to that of the great city itself. After the fall of Teotihuacan there may have been a diaspora of craftsmen and other refugees, some of whom landed in the Maya Lowlands. This second wave of Teotihuacan influence dates about A.D. 700.

Historical Summary. What follows is strictly an outsider's interpretation of the evidence from Teotihuacan, depending entirely on the admirable work of specialists. Sanders's research has shown that there was likely military and other competition among several small communities in the Late Preclassic. At some time during the period 150 B.C. to A.D. 150, unity was achieved, perhaps forcibly, and these small, fortified ridge-top towns were abandoned, a larger community being established around the springs in the valley. This town became the core zone of Teotihuacan.

The rulers of this early town or city perhaps had already established a rather coercive philosophy of rulership. Certainly, the organizational ideas

and institutional seeds of civilization and state-level political structure must have been developed. One alternative is to consider the possibility that there was an organizing genius or a set of extremely politically talented people who developed the new kind of complex culture. On the other hand, as A. L. Kroeber (1963) has shown, geniuses get their opportunities because their cultures have developed the basic structures of their fields.

Cuicuilco appears to have been very advanced in its features, and some find a parallel with Teotihuacan in its avenues, grid plan, and large residential buildings (Rattray 2001). This suggests that perhaps the refugee elite and general population of Cuicuilco took shelter at Teotihuacan and may have swamped the native leadership or merged with it. In any case, when Cuicuilco was literally wiped out by the volcanic eruption of about 50 B.C., the way was open for a new order of society. The ideology of Teotihuacan expressed in the later murals, sculpture, and smaller art was apparently set at this time.

The philosophy, theology, and worldview of the rulers apparently included a conviction that Teotihuacan was the center of the universe and even the location of its creation. The immense Pyramid of the Sun is one of the first projects carried out under the new order and covers what seems to have been a set of sacred grottos. The structure is oriented toward the west, it will be noted, as is the Feathered Serpent Temple in the Citadel. A kind of world axis is transcribed into the city plan by the N-S and E-W avenues, although it will be recalled that the actual orientation is 15.25 degrees E of North. In fact, the city was shifted from its earliest location to the cave and grotto zone. Their assumption that creation took place at Teotihuacan may have led the rulers and their people to believe in a sacred mission to contact and convert other peoples to their "true faith." Such an assumption of theological superiority was probably combined with a militant desire for political domination and the desire for wealth and prestige.

In the course of their expansion, the Teotihuacanos dominated the basin and began to contact peoples and cultures of quite different aspects. However, this period of early expansion was not without its internal disagreements, and a rather bloody intrigue and coup d'état may have occurred at the death of one of the rulers about A.D. 150. The sacrifice of about two hundred court and military personnel would have cleared the decks for another group. At this point, I disagree with the specialists in their assumption of a new era of a kinder, more collectivist type of government. The outside evidence bespeaks a strong, centralized, and despotic government in control of matters. The contacts between Teotihuacan and other areas became more intense and more intrusive. It is becoming clearer that the Maya Lowlands episodes were state-sponsored contacts about A.D. 360 and the subsequent overthrow of the Tikal dynasty in A.D. 378. Tikal's rapid expansion and building of a powerful regional state happened about this time, and this

expansion seems to be connected to the presence of Teotihuacan warriors, advisors, and even behind-the-scenes rulers. It will be seen that the Zapotec kingdom centered on Monte Alban systematically arranged its defenses against an intrusion from the northwest; that is, from the Teotihuacan area. This pattern of initial trade contact and subsequent intrusion may have been a pattern followed by Teotihuacan rulers. Certainly, Kaminaljuyu became a colony of Teotihuacan ruled by its military. It seems unlikely that this was accomplished merely by a group of military adventurers. The foreign quarters within the great city possibly reflect other less well-recorded intrusions into other parts of Mesoamerica, into the Huasteca to the northeast of the city, and to the northwest and west as well. While specialists, except for Rattray (2001), generally resist the idea of a Teotihuacan empire with tribute payments, I find the idea easy to accept. The difference between the Aztec and the Teotihuacano is simply that we have written records, eyewitness accounts, and memoirs to document the Aztec tribute demands and to supplement the rather ambivalent archaeological data.

In any case, a long period of great affluence for Teotihuacan began in the period after A.D. 100, and the drastic and expensive reorganization of the city into its characteristic dwelling compounds in the fourth century argues for wealth beyond what could be generated locally or regionally. Economic reasons for Teotihuacan's interest in the Maya Lowlands included salt, medicinal herbs, cacao beans (chocolate), exotic-bird feathers, incense (copal), jade, and many other products. The question would seem to be not why Teotihuacan intruded into this area, but rather, how it could have resisted if the opportunity offered.

However, by about A.D. 500 Teotihuacan seems to have pulled back from its contacts. Perhaps political, economic, and military matters had undergone drastic changes over time (150 to 200 years), but it also appears that matters at home were unsettled. M. L. Sempowski (1987) and Rebecca Storey (1991) see evidence that Teotihuacan had an increasingly centralized control of the economy and an increasingly rigid social structure. The population was suffering from increasingly poor health, decreasing life spans, and higher infant mortality. Perhaps this reflects decreased tribute income, but it also may indicate a series of increasingly dry years, with consequently smaller crop yields and even crop failures. Military groups from other zones seem to have been present in the highlands at this time—perhaps mercenaries of Teotihuacan, but increasingly, independent and competitive groups. Thus, one can envision the development of a state of vulnerability in which the rulers might find themselves menaced by outside forces but also fearing unrest within the city. We will leave the great city at this point, about A.D. 650, and return to it in the next chapter to consider the circumstances of its rather spectacular fall.

Classic Veracruz Centers: Cerro de las Mesas and Matacapan

While Tajín in the north was still a small and undistinguished center, Cerro de las Mesas in the south became the most important regional center in the Veracruz plain after the epi-Olmec period. The site underwent great expansion, and some dozens of platforms and buildings were built. Although little of the site has been dug, there is no doubt that it was of great importance, if only because of the fifteen stelae and eight other monuments found there. These Early Classic sculptures echo some Izapan traits but are largely distinctive. Stiff human figures stride or stand on the stelae in poses that are reminiscent of early Maya styles. These persons are accompanied by hieroglyphic texts, some of which include long-count dates written in the Maya Lowland system or a parallel system (fig. 6-10). There are also many unread texts that seem to deal with names, places, and conquests.

Tlamimilolpa-Xolalpan (A.D. 200–550) pottery is found at Cerro de las Mesas together with a locally developed set of gigantic clay sculptures. The latter include gods also represented in the figurines and murals at Teotihuacan—the old fire god (the Aztec Huehuetotl), for example. Even so, a majority of ceramic types are of strictly local tradition. The accumulated wealth of the elite at Cerro de las Mesas is shown by the enormous cache of about eight hundred items that P. Drucker found there (1943a). The cache included such things as Olmec heirloom pieces, other jade carvings, jewelry of calcite and serpentine, and much other paraphernalia. Perhaps this represents a burial of the ritual equipment of a great person. It seems significant that when Teotihuacan influence disappeared in the Gulf Coast plain, Cerro de las Mesas was abandoned. It is into this power vacuum that Tajín expanded.

Matacapan is a large center, consisting of some seventy mounds, located in the Tuxtla Mountains by the sea. The one mound excavated by Valenzuela was a typical *talud-tablero* Teotihuacan platform. Ceramics include Teotihuacan pottery along with locally made wares. A project under the direction of Robert Santley (1989) has confirmed the presence of a Teotihuacan population, possibly living in the same sort of apartment compounds that are found at the mother city. A great deal of domestic refuse and local imitations of Teotihuacan braziers and cooking vessels were found. Much more of the material is ritual in nature, consisting of small incense burners and locally produced cylinder tripods. Santley's work dates the Teotihuacan presence to the period A.D. 400 to 700. Matacapan may have been a way station established and used by Teotihuacan groups on their way to the coastal plain of Guatemala and thence to Kaminaljuyu.

Late Classic Centers in the South: Nopiloa and El Zapotal

While Tajín dominated matters on the Gulf Coast to the north, Nopiloa was apparently the prime center in the south. It is not as large or impressive

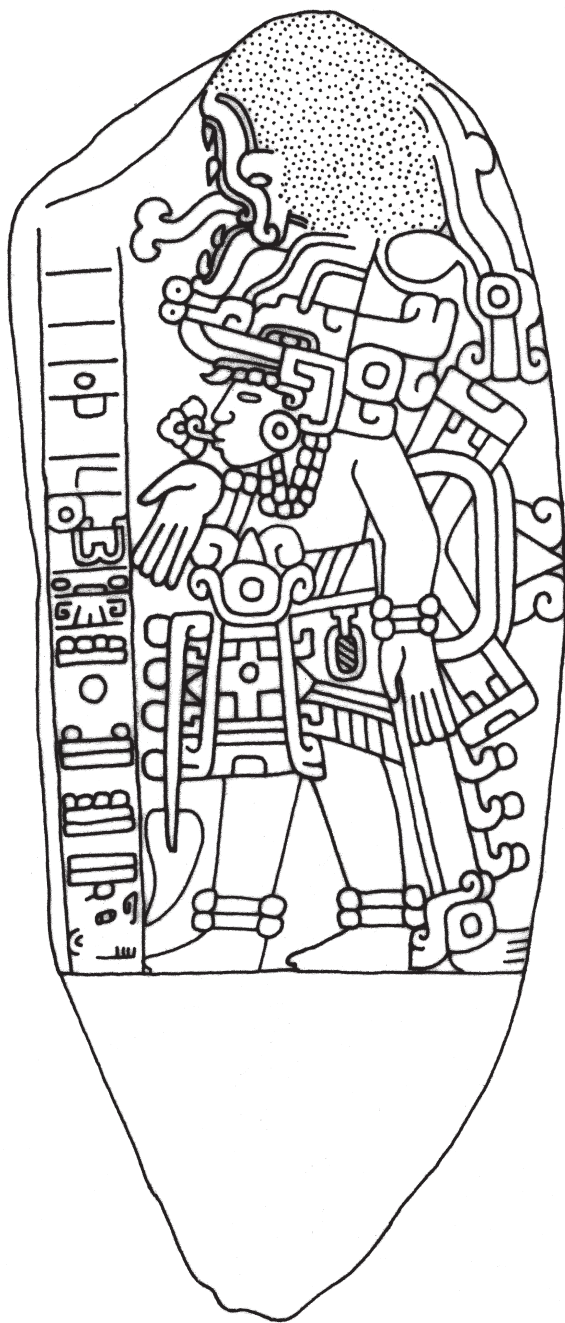


Fig. 6–10. Stela 5 from Cerro de las Mesas, Veracruz, Mexico, an Early Classic site that was probably extant during the Late Preclassic. Note the use of dot-and-bar numeration, shared with the Lowland Maya but not with the Central Mexican Highlands.

as Cerro de las Mesas. Indeed, M. D. Coe (1965a) thinks that the culture of the area may have stepped back to essentially a village-style Late Formative state. This seems unlikely, given the evidence of widespread uniformity of complex religious practices that are now available. A Pan-Coastal art style was developed, mainly expressed in clay sculpture and small stone sculpture. The Yoke-palma-hacha small sculpture complex is widespread. The Smiling Figure complex developed in parallel with the sculpture. These famous figures, with their unwarrantedly broad grins, are found throughout the area.

An excavation at the Mixtequilla site of El Zapotal, not far from Nopiloa, has produced some evidence of their function. A mound was found at El Zapotal containing many burials in association with a remarkable shrine made of modeled clay. The shrine included a large and bony image of a death god. One nearby multiple burial was guarded by Smiling Figures that brandished knives in their hands, as if warding off the many hazards of the afterlife to which Mesoamerican souls were subject. An ossuary in the same mound consists of a stack of eighty skulls, about 3 meters (10 feet) high and buried in a pit. It is difficult to know whether these were burials of persons dying normal deaths or the remains of sacrificial victims disposed of in a ritual manner. The fact that late Teotihuacan pottery was found with the burials indicates that Teotihuacan may have been a power in the plain after A.D. 550, but likely no later than A.D. 650.

Early Civilization in Northern Veracruz: Tajín

The coastal plain of Veracruz is divided into compartments by rivers that flow to the Gulf of Mexico from the highlands. As one proceeds north from the old Olmec heartland, the climate becomes progressively drier. Even in the northern compartment where Tajín is located, mists and rain prevail much of the year, but a longer dry season occurs than in the south. This was apparently the case in ancient times, causing problems for the inhabitants. Water is scarce during the dry season, and even the sea is 39 kilometers (24 miles) from Tajín.

The Preclassic Background

Long sequences of ceramic complexes have been found by G. Ekholm and R. S. MacNeish to the north of Tajín at Tampico (Ekholm 1944; MacNeish 1954). These sequences begin about 1500 B.C. and continue to a period linked with the earliest Tajín occupation, about A.D. 100. Ceramics and figurines of great variety have been found all over Veracruz, one of the most famous stylistic groups being the Remojadas sequence. This pottery is derived from the zone around the mouth of the Tecolutla River. Although the excavator has divided the pottery into lower (early) and upper (later) periods, it is apparent that both complexes represent enormous spans of

time and varieties of materials. Lower Remojadas includes Middle and Late Formative items, and Upper Remojadas is made up of Early and Late Classic pottery and figurines. There are practically no published settlement pattern data for the central and northern Veracruz Formative period. Some Late Formative house mounds from Chalahuites, found by García Payón (1971a) to be made of river cobbles, are an exception. We must assume that village-level life was the rule during most of the Formative period, but we have no idea whether or not there were Olmec-influenced towns of greater sophistication, nor do we know if there was an indigenous development of regional centers and emergent elites. Finally, there is little data on the nature of the transition from village-level society to civilization. Few of the many Formative sites were used in the Classic period. There are no indications of epi-Olmec influence or centers of any great importance during this transition period. Presumably, there was a pattern of population growth similar to that in the rest of Mesoamerica, accompanied by cultural elaboration and then a shift from dispersed villages to more concentrated centers. At least toward the end of the Formative stage, the non-Olmec area of Veracruz shows distinct regionalization. Carved stone yokes, large figurines with smiling faces, and special ceramic forms such as chile grinders were all well developed. Some scattered finds in the Tajín zone show that it was thinly occupied during the Formative.

The Classic Florescence

Tajín itself has been excavated for over thirty years, but detailed architectural or pottery descriptions have yet to appear in print. Fortunately, syntheses by S. Jeffrey K. Wilkerson (1987) and M. E. Kampen (1972) aid in making sense of the site. Some of the chronology that follows is my own interpretation of García Payón's work.

Chronology. There are two major periods in the city's history. During the first period (A.D. 100–550) Tajín was a minor center with relatively small pyramids and a few elite residences. Ceramics from this era show great Teotihuacan influence, especially that which links it to the Early Classic (Middle Horizon) phases of the great city. Trade wares from the Valley of Mexico are present, as well as Thin Orange materials that are probably from northern Oaxaca. Teotihuacan may have established Tajín as a commercial-military colony. It will be recalled that there is a probable Classic-period Veracruz quarter at Teotihuacan itself.

Teotihuacan influence began to wane about A.D. 500, and it is after this date that Tajín reached its greatest development. This second phase (A.D. 550–1100) was one of dynamic expansion of Tajín culture through the coastal plain and possibly even as far as Cotzumalhuapa in Guatemala. The spectacular architecture and sculpture that the visitor sees today at Tajín is nearly all from the second period (Marquina 1964).

Building and Site Function and Sculpture. Tajín is situated among dramatically abrupt hills, with much of the 5 square kilometers (1.9 square miles) of the site laid out on relatively flat ground in a valley. An adjacent hillside has been terraced and otherwise modified for an enormous mass of structures. There are more than two hundred mounds (Krotser and Krotser 1973). The basic plan, made up of a series of courtyard groups, is thus more like that of Classic Maya centers than it is like that of more highly organized Teotihuacan. Buildings fall into the familiar categories of temple, elite residence, and ball court. There are eleven ball courts at Tajín, reflecting the extreme ritual importance of the game in the lives of these ancient Veracruzano. Architecture is decorated by a baroquely elaborate style in both sculpture and modeled stucco. A hallmark of the building style is the common use of a jutting cornice on terraces.

The center is dominated by a large temple-pyramid about 18 meters (60 feet) high which is fantastically decorated by 365 niches. It has been suggested that these represent the days of the tropical year and that there were originally small stucco figures in the niches. Other smaller temples dot the site. Large, elaborate palace-residential buildings imply an enlargement of the elite class at Tajín from earlier times.

Sculptural style reaches its fullest expression in ball-court and temple slabs that show human sacrifice, warriors, and the ball game. All of these elements seem to be tied together into one ritual activity. Kampen (1972) says that the one major theme in Tajín art is human sacrifice. Wilkerson (1987, 64–66) outlines a plausible ritual cycle as reflected in the ball-court sculptures. This situation parallels that of the Cotzumalhuapan sculpture some 1440 kilometers (900 miles) away. Other subjects include the watering of maguey plants with sacrificial blood. Hieroglyphs that accompany the sculpture refer persistently to a 13 Rabbit, possibly the calendrical name of a great ruler. This putative ruler is shown sitting on a throne surrounded by important captives who are in the process of being sacrificed (Wilkerson 1987, 71–72). Particularly interesting are depictions of what appear to be Eagle Knights, a military order later widespread over Mesoamerica. Enormous amounts of small sculptured objects were produced, most of which had either a ritual or a functional use in the sacred ball game. Yokes, thin stone human heads, turkeys carved into the “*palma*” form, and other attractive items are known. *Palmas* were stuck into ballplayers’ belts, while yokes were worn around the waist. These items were widely traded during this period and are found in highland Guatemala.

Based on P. and G. R. Krotser’s work (1973) and that of Wilkerson (1987), it seems clear that a large population was scattered about the center in house lots that contained gardens and fruit trees, as was the pattern at Tikal. Using the Tikal density of 600–700 people per square kilometer (1,500–1,800 per square mile) and accepting the Krotser’s estimate of Tajín’s extent

as 5 square kilometers (2 square miles), an estimated population of 3,000 to 3,500 can be calculated. Tajín dominated much more territory, of course, and total population must have been at least three times the core population, or about 13,000 in total. Wilkerson (1987, 73) surmises that this population was likely sustained by intensive raised-field irrigation systems found nearby. A sculpture from Tajín now in the Museum of Xalapa shows a ritual involving a cacao tree.

Given the above information, incomplete as it is, it is not difficult to think of Tajín as one of the more militaristic allies or colonies of Teotihuacan, and one that went on to establish tributary colonies of its own, one of which may have been Cotzumalhuapa. It is particularly significant that Tajín expanded and underwent a florescence only when Teotihuacan influence was removed. It is also clear from pottery found at the site that the great period of Tajín corresponds with an important period at Monte Alban in Oaxaca and at Xochicalco and Cholula. The burning and abandonment of Tajín about A.D. 1100 meant the lapse of the zone back into a condition of fragmented social and political units. Tajín had politically dominated the coastal plain, but when it declined, new centers arose along the central coast, controlling the region until the arrival of the Spaniards.

Summary. Veracruz clearly had a crucial role in transmitting Teotihuacan influence throughout eastern Mesoamerica during the Classic period. The sites of Cerro de las Mesas and Matacapán may have been Teotihuacan colonies or allies during the Early Classic. Tajín was a small, unimportant center in the north during this time. When Teotihuacan influence and power was withdrawn, the Early Classic centers deflated. Tajín then began a rapid cultural and military florescence and probably dominated the coastal plain and perhaps the transisthmian zone, including the former Teotihuacan colony in the Cotzumalhuapan district.

The Oaxacan Late Formative and Early Classic

A consideration of the Late Formative material from Oaxaca has been reserved to this point in order to give it the continuity it deserves.

During the period from 700 to 500 B.C. (Rosario phase), San José Mogote reached its apogee as a regional center. As noted before, it was probably only one of a number of such centers and seems not to have had more than 1,400 people supporting it. Public architecture was accumulated into a small "acropolis," which included an elite residence. The appearance of sculpture and the use of the sacred almanac (260-day calendar) reinforces the impression of an increasingly stabilized social structure with a hereditary elite at the top. The sculpture includes a depiction of a sacrificed human captive. Undoubtedly, warfare in some form was present, and Flannery and Marcus (2003) note that this was a period of "chiefly warfare." However, as impressive as all of these matters may be, it remains the case that Monte

Alban as well as other sites of later importance were occupied by 500 B.C. K. V. Flannery, J. Marcus, and S. A. Kowalewski (1981) do not see any sign of state institutions in this phase. They consider that Monte Alban I (500–200 B.C.) was the period of development of such institutions, given that a fully developed state is present by 200 B.C. They think that an elite class developed on the basis of a religious and ritual leadership that also redistributed obsidian and patronized certain craft specialties. To this set of elite functions should be added that of military leadership as well as some general administrative duties such as settlement of disputes within the communities. Legal functions are a nearly invariable duty of any sort of community leadership, even on the simplest level.

The way in which leadership became hereditary is still an unsettled issue unless one grants that the separate creation myths of the later Zapotec and Mixtec were present. Such myths justified the later hereditary rulers, partly through genealogy and partly through the putative ties to the supernatural. Such ties, emphasized and established through ritual position, would have been reinforced by the development of a cult of ancestors as intermediaries for mankind with the gods. If such intermediaries had been religious leaders in their lifetimes, then their descendants would have a better claim to means of communication with them.

In any case, it is now certain that the Zapotec state was in existence by the end of Monte Alban I (200 B.C.), and it is to the sequence largely centered on the great site of Monte Alban that we must turn.

The Oaxacan Classic: Monte Alban

The major periods of civilization in Oaxaca are named after phases defined by work at Monte Alban and modified by later investigations. Thus, we have periods denominated Monte Alban I to V, although the best information on the last two periods is actually not from Monte Alban itself. The following chronology summarizes the phasing and gives equivalent Christian dates.

Monte Alban Period	Christian Dates
I	500–200 B.C.
II	200 B.C.–A.D. 250
III	A.D. 250–700
IV	A.D. 700–1000
V	A.D. 1000–1500

Transition to Civilization and Preeminence

By about 400 B.C. Monte Alban began to outstrip its competitors, eventually rising to preeminence. The reasons for this success are still obscure. Developmental theories such as the Palerm-Wolf hypothesis explain the enabling circumstances. No doubt the massed demographic and economic

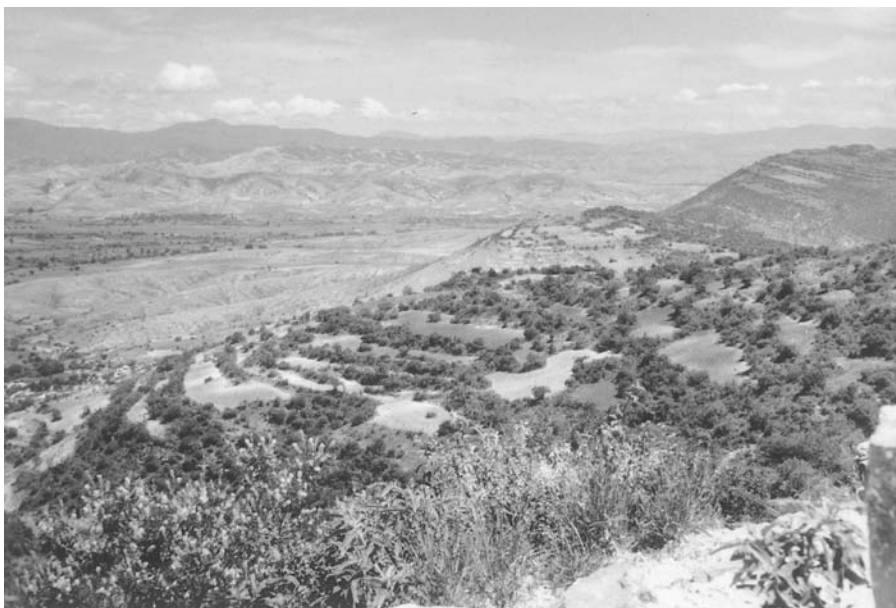


Fig. 6-11. View north from the main ridge at Monte Alban toward the Cerro del Gallo in the middle ground and Atzompa in the background. In the far distance are the mountains of the Mixteca zone, from whence came intruders into the Zapotec region.

power of the valley within which such historical events take place was important but not the whole story. In the specific case of Monte Alban, terrain was also a factor.

Topographically and scenically, Monte Alban's ridge system dominates the Central Valley of Oaxaca (fig. 6-11). The valley is divided into three arms. The Etlá branch runs northwest to southeast and then splits at the ridge; a southeastern branch runs off to Tlacolula and beyond; the southern arm reaches down to the area of Zaachila. Any community wishing to physically, politically, and militarily control the entire valley had to control the ridge system at its crux.

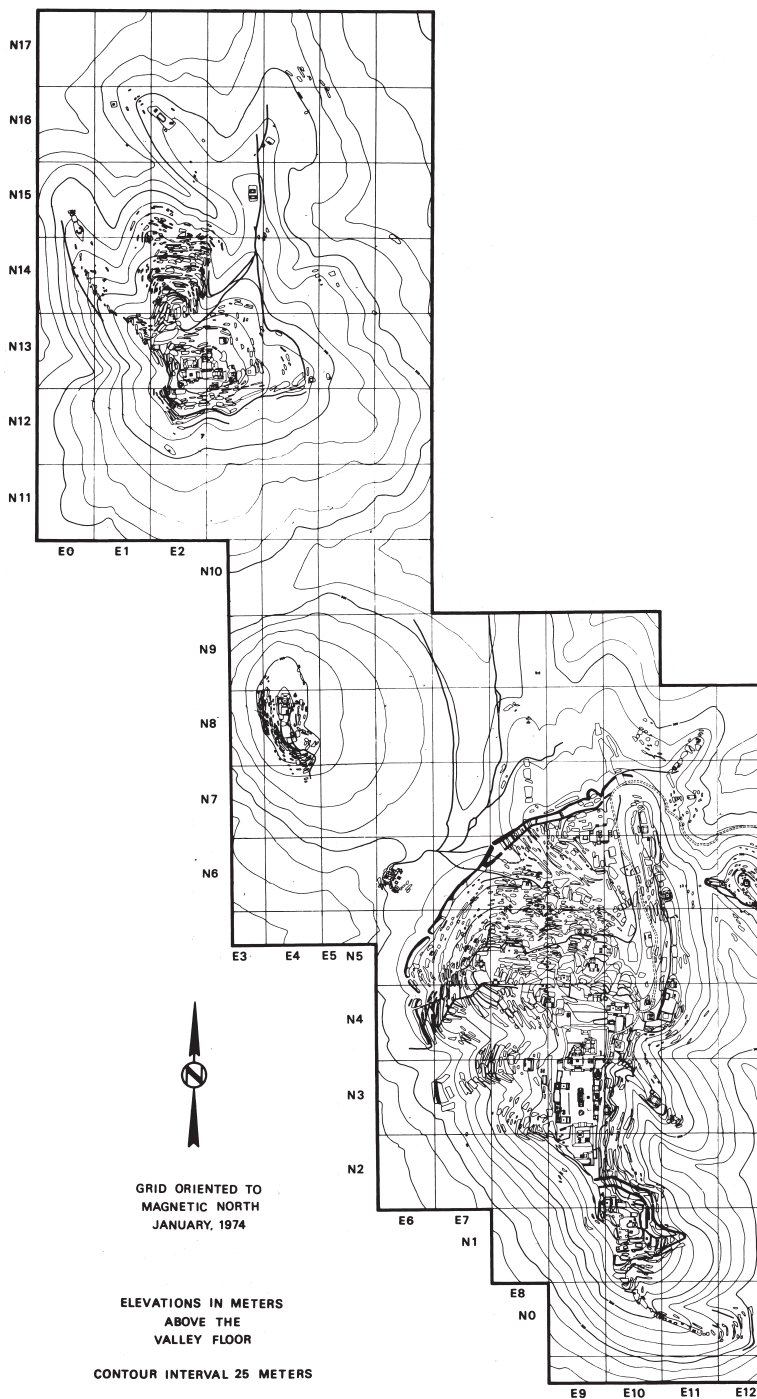
Flannery's research group has concluded that the site was chosen partly because of the above terrain factors but primarily because it was neutral ground where elite groups from several communities, including San José Mogote, could reside (Flannery, Marcus, and Kowalewski 1981). Blanton (1978; Blanton and Kowalewski 1981) further argues that Monte Alban was established because it was the logical place to locate the headquarters of a voluntarily formed confederation.

Ignoring the principle of original sin and considering only the archaeological data, it seems most unlikely that the unification of the valley took place solely on a voluntary basis. Flannery, Marcus, and Kowalewski (1981) note that warfare was present during the period 700–500 B.C. and escalated through Monte Alban I and II. The presence of dozens of sculptured monuments depicting captives at Monte Alban in the period 500 to 200 B.C. as well as formal fortifications at the city by about 100 B.C. suggest that unification was not a matter of the establishment of a “peaceable kingdom.”

Some of the most interesting work has been done by Richard Blanton (1978), whose research group surveyed the slopes of Monte Alban’s ridge and located over two thousand terraces. These terraces were used for both agricultural and housing zones (maps 6-3, 6-4). Excavations by Marcus Winter (1974) have shown that at least some of this terracing and housing dates back to the earliest part of Monte Alban I. Blanton estimates that five thousand people resided at the site and that this concentration of population amounted to about 50 percent of the total in the valley. A settlement hierarchy is already apparent, with at least six secondary administrative sites outside the Monte Alban zone. The boundaries that appear in analytical operations are interpreted as falling between administrative districts. However, it appears equally likely that these were boundaries between independent political units, some of which were resisting amalgamation into a unified state. The *danzante* figures at the top of the ridge possibly represent the leaders of the failed resistance.

Monte Alban I and II (500 B.C.–A.D. 200). The entire top of the Monte Alban ridge was artificially sculptured into a series of flattened and filled plaza areas around which was arranged the formal architecture of the center. Later massive construction has covered the earliest buildings, but there is no doubt that large-scale building was done in period I. The only major piece of architecture known from this phase is the Danzantes structure, a stone platform on the edge of the main plaza (Building L). A small inner platform some 3 meters (10 feet) high was the first built on the spot and may have supported wood and thatched buildings.

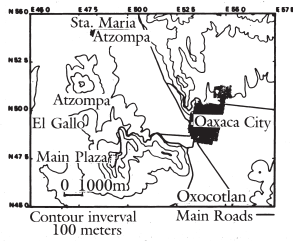
The most interesting feature of the platform is the sculpture that is set into the walls. These are the famous sculptures the *danzantes*, or “dancers” (fig. 6-12). The so-called *danzantes* are boneless-appearing humans depicted by grooved lines incised on slabs of rock. Many appear lifeless, all are nude, and many are sexually mutilated, leading M. D. Coe (1968) to suggest that they represent dead and tortured enemies. Many of the three hundred known *danzantes* have hieroglyphic names, probably indicating that they were persons of importance. This is confirmed in several ways, not least of which is Monument 3 at San José Mogote, mentioned before as a depiction of a sacrificed war captive.



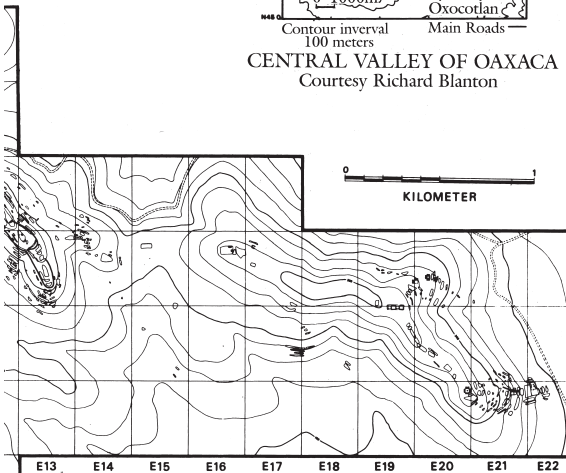
Map 6-3. The urbanized zone of Monte Alban, Oaxaca, Mexico. This very large site was located on a ridge above the present-day city of Oaxaca. Richard E. Blanton and his colleagues found that the entire ridge had been terraced and was occupied by apartment compounds faintly similar to those of Teotihuacan. (Courtesy Richard E. Blanton)

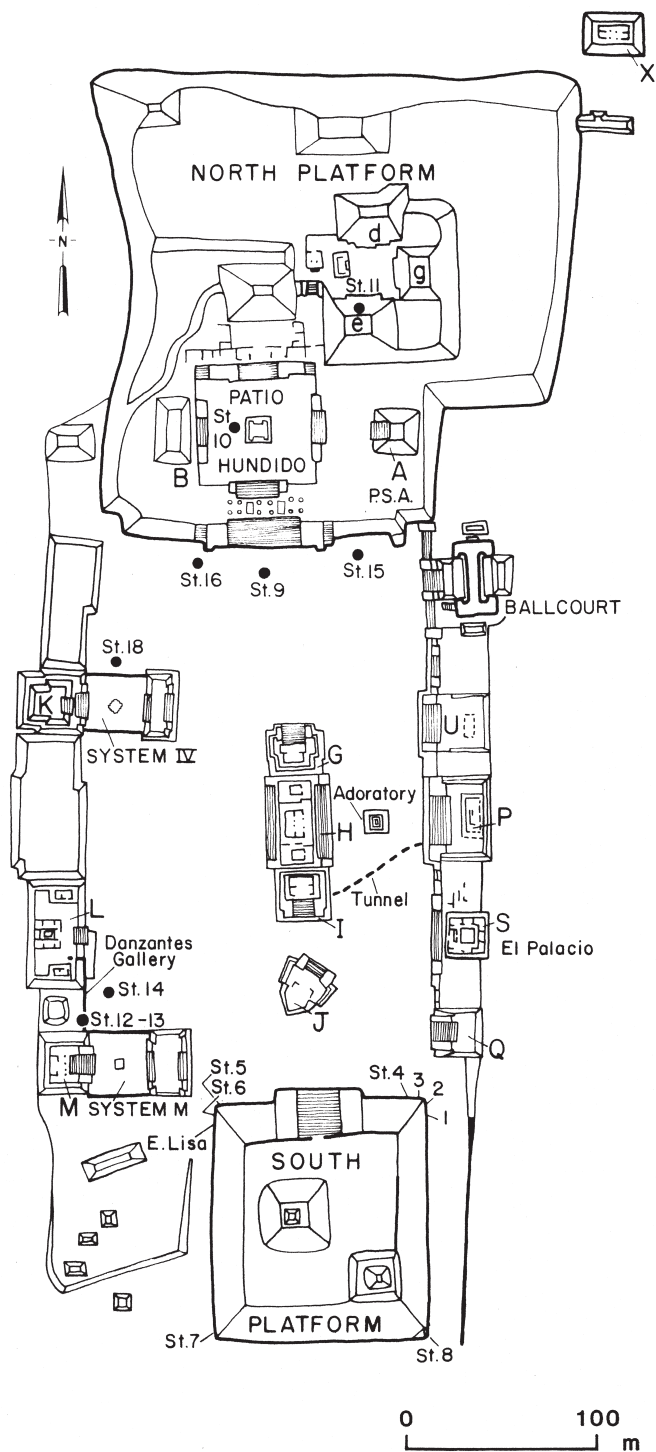


VALLEY OF OAXACA



CENTRAL VALLEY OF OAXACA
Courtesy Richard Blanton





Map 6-4. The central, most elevated part of Monte Alban, showing major temples, palaces, and other structures.



*Fig. 6–12. Early Oaxacan sculptures at Monte Alban are carved in a style known as that of the *danzantes*, or dancers. Actually, these are portraits of dead enemies whose bodies have been mutilated. They reflect a period of considerable warfare at the beginning of the great period of Monte Alban—one in which a unified Zapotec state was created.*

Period I ceramics were surprisingly complex, making up by a wide variety in form what they lacked in color. Human and animal effigies began their long-lasting popularity. Gray wares were especially typical, and a popular bottle form with attached spout was traded as far south as Chiapa de Corzo.

Hieroglyphic texts on stone include dates in the 260-day sacred almanac and the 365-day year. Other notations are probably personal names and place-names. A two-column text from this period lays out what is probably a date with a verb and possible name (Marcus 1980). Simple stone tombs (“box tombs”) are found within the center. All of these features imply a fair level of sophistication among the elite class at Monte Alban. By the end of the period, the population at Monte Alban had risen to about sixteen thousand.

Contemporary Centers: Monte Negro and Dainzu. In the Tlacolula branch of the valley there is a very large site called Dainzu, the main structures of which are backed against a large butte. It may be significant that this position is also militarily defensible, although not as strong as that of Monte Alban.

Bernal has excavated at the site and found a very large stone platform that supported a masonry building. Set into the walls of the platform and its stairway are sculptures similar but not identical to the *danzantes*. A great many (forty-seven) of the Dainzu sculptures show ball players (Marcus 1983a). Bernal (1965a) also found a large ball court nearby which dates to the same period as the platform and much of the sculpture: Monte Alban I (1965a). Similar tombs occur at both centers at this time. Dainzu was likely the capital of one of the competing petty states eventually incorporated into a larger state headed by Monte Alban.

The Monte Negro (Black Mountain) site is of special interest. It is located north of the Central Valley in an area later occupied by the Mixtec. The top of a ridge was modified as at Monte Alban, and a town with thatched-roof houses was erected. The ceremonial buildings were grouped around an open courtyard. One of these civic structures had the unusual feature of large columns carved from single pieces of stone. In general Monte Negro represents a paler and less-developed version of Monte Alban I culture. No writing or sculpture has been found. The pottery is poorer in variety. It possibly represents a provincial version of Monte Alban I culture, and one that is possibly ancestral to the Mixtec. On the other hand, it may also be an outlier of Monte Alban I culture that was later displaced (Flannery 1983a).

Some 307 Monte Alban I sites were found by Blanton's group in the Central Valley, but many of these finds are based solely on samples of surface pottery. It is estimated that the total valley population amounted to about thirty thousand by 200 B.C. With nearly 50 percent of the total population, if Monte Alban was not the dominant site at the beginning of the period, it became so by the end of it.

Monte Alban II (200 B.C.–A.D. 250). In period II we see an enlargement and development of complexity that signals the accession of Monte Alban to fully civilized and sophisticated status. The full-scale sculpturing of the Monte Alban ridge tops into flattened and terraced areas took place during period II (Flannery 1983b). The scale of this effort indicates that Monte Alban could call on resources of manpower not available to it before. Certainly the period of political unification of the Central Valley was necessary in preparation for this effort.

Within the great plaza at Monte Alban, the arrowhead-shaped observatory (Building J) was built; apparently its peculiar plan was dictated by its function of making astronomical observations. Other platforms appear that have the characteristic Oaxacan balustrades with a decorative feature reminiscent of the *talud-tablero*. These platforms supported temples with two rooms and thatched roofs. Presumably the elite class that directed these construction activities lived in the center, but no palaces have been excavated from this period.

Stelae and bas-reliefs with hieroglyphs were carved and displayed. Many of the bas-reliefs show human heads hanging downward from glyphs that are apparently place-names, and Caso (1965) suggested that these are records of conquests, an opinion with which Marcus (1983b) concurs and which she amplifies. There are more of such records than before, indicating a relatively violent era.

Blanton and Kowlewski (1981) note several interesting features in period II. The valley in general, Monte Alban included, suffered a population decline; 30,000 to 20,000 for the valley and 16,000 to 14,500 for the city. Fortifications were built around Monte Alban, as noted before, and it appears that defensible sites were the ones that thrived. All of this, again, implies warfare within the valley itself. Probable correspondences between sixteenth-century Aztec name glyphs and those found on Monte Alban II monuments suggest that Monte Alban was also engaged in military expansion outside the valley (Marcus 1980). Forty such name-place glyphs occur on period II conquest monuments. In the vicinity of one of the identified places, Cuicatlan, excavation revealed an edifice of skulls that resembled those built by the Aztec of skulls of sacrificed victims (Redmond and Spencer 1983).

Tombs of period II are more elaborate, and some of them show features that lasted until the Spanish Conquest. Under the courtyards were stone burial chambers with steps leading down to antechambers. These were used for sepulchers in which only one person might be buried. In other tombs retainers and servants accompanied their masters into the afterlife. Some of the period II tombs are decorated with wall frescoes. The Tomb 72 mural is of glyphs that refer the Zapotecan version of the 260-day sacred almanac (Miller 1988). Large incense burners or burial urns were placed with the dead. Caso and Bernal (1952) thought that these urns represent various gods, with one of the most popular being Cocijo, the local god of rain. However, Marcus (1983c) argues that they are portraits or apotheosized depictions of ancestors or contemporary relatives, some wearing masks of gods in the same manner as that of some figures on contemporary sculpture. Most urns carry a calendric name derived from the 260-day calendar, suggesting that they indeed depict humans and not deities.

Other ceramics became more complex, with delicately painted stucco applied to some vessels. As in so much of period II development, the major changes were in the elite sector of Oaxacan culture. Much of the elaborate pottery seems to be linked with ceramics of Veracruz and Chiapas. It is very difficult to detect any significant changes in the folk culture of the villages away from the centers, indicating that for most people, daily life went on much as before.

Apogee: Monte Alban III (A.D. 250–700). The two major cultural and linguistic groups occupying Oaxaca at the time of the Spanish Conquest were the Zapotec and Mixtec. The culture fully developed during period III

was undoubtedly Zapotec. The features of Zapotec civilization as known from the Conquest period are so similar in both general features and detail to that of period III that there is little doubt that Monte Alban periods I to IV represent Zapotec culture. Thus, there was probably a Zapotec state established by A.D. 200, developing during period II, and expanding during period III.

The major historical features of period III are (1) the final establishment and expansion of a unitary Zapotec state in the Central Valley of Oaxaca and beyond; (2) the expansion and enormous size of both city and population at the capital, Monte Alban; and (3) the independence of Monte Alban from Teotihuacan.

Chronology. The end of Monte Alban is now placed at about A.D. 700, or roughly at the same time as the collapse of Teotihuacan. The period is divided into two phases, IIIa and IIIb. Trade, pottery, and other influences from Teotihuacan are present in IIIa but are missing from IIIb, which is a principal distinction between the phases. The late phase seems increasingly inward-looking and isolated. At the end of IIIb, Monte Alban was abandoned as a city. However, cultural continuity beyond this event is indicated by the fact that pottery from IIIb and the following phase IV can be distinguished only by close study. The Zapotec had lost their ancient capital about A.D. 700 but were as culturally distinctive as ever.

The City of Monte Alban. Bernal (1965a) defines Monte Alban during period III as a true city. Formal public architecture and surrounding terraces covered over 40 square kilometers (about 15 square miles). Density was not nearly as high as at Teotihuacan, but Blanton's surveys have shown, as noted before, that more than two thousand terraces, all with one or more houses, occupy the slopes of the main ridge system. Many small ravines were dammed for water. The whole ridge was probably dotted with these small ponds used by the households.

Population growth was spectacular during period III. It began slowly at the city itself, but by the end of period IIIb, 24,000 people lived at Monte Alban and perhaps 31,000 more in 356 other communities (Blanton and Kowalewski 1981). Jalieza, in the southern arm of the valley, became a large preindustrial city with about 12,000 people and is thought to have been the administrative center for its district. Several other large centers handled the administrative tasks for the rest of the Central Valley of Oaxaca. As an indication of the difference in order of magnitude of urbanism, it can be noted that Jalieza had only about 45,000 cubic meters (58,860 cubic yards) of public architecture, whereas Monte Alban's public buildings had about 600,000 cubic meters (7,848,000 cubic yards) of mass. This also ignores questions of quality and detail, such as plans, decoration, and so forth.

Monte Alban had developed into a splendid center by this time, and during period IIIb it assumed its most complex form. It is this architecture



Fig. 6-13. System IV, Monte Alban, a temple complex dating from about A.D. 450. It is one of fifteen temples on the top of the ridge, which possibly correspond to the fifteen barrios of the city.

that the modern visitor sees when at the site (figs. 6-13, 6-14). The public buildings are arranged on a north-south axis, with two enormous platforms at either end of a very large plaza. The platforms support complex arrangements of pyramid-temples, palaces, patios, and tombs. The east side of the great plaza is lined with six residential buildings and a small ball court (figs. 6-15, 6-16). The middle of the plaza is occupied by three buildings jammed together into one unit. The ancient observatory-conquest monument (Building J) sits detached in front of the grand staircase leading to the south platform. The west edge of the plaza is occupied by three units, two more or less symmetrical architectural complexes, called System M and System IV, which flank the ancient *danzantes* structure (L). The south platform may date entirely from period IIIa, but most of the rest of the buildings mentioned were modified or enlarged during period IIIb. Ancient sculpture was retained, moved around, and reused. Thus, some of the *danzante* sculptures were shifted. New stelae and carved slabs commemorated new conquests and other events of dynastic importance (figs. 6-17, 6-18). One stela on the south platform shows a conqueror symbolically driving his lance through the name glyph of a town. Other stelae in the same zone show bound captives standing on the name glyphs of their hometowns.

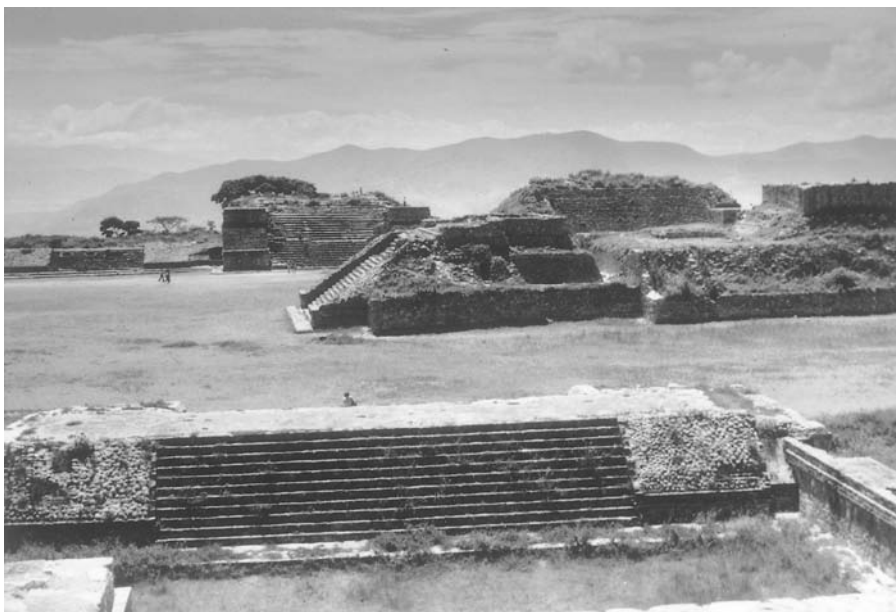


Fig. 6-14. View of Monte Alban east from System IV, with a part of that complex's forecourt visible in the foreground.



Fig. 6-15. Monte Alban ball court in the central (upper) civic complex. Ball courts with an I plan appear early in Oaxaca.



Fig. 6-16. Monte Alban. View of an interior courtyard in the palace zone of the northern great platform, main civic complex.

The architectural style of Monte Alban was characterized by something called a *doble escapulario*, or double recess, which has somewhat the appearance of a World War II artillery embrasure. Some 90 percent of the public buildings at Monte Alban have this feature, which is very regional. It is not clear whether Monte Alban architecture was painted and elaborated by modeled stucco, but certainly most of it was plastered.

One hundred and seventy formal tombs have been found at the site. Most of these date from period III and have a characteristic form. They are built of masonry slabs and are placed below the courtyard floors. Some have been found in the great plaza and many more under the patio floors of apartment houses on the upper slopes of the ridge. Most period III tombs are entered by a flight of stairs leading down below ground level to an antechamber. The facades of the tombs are nearly identical to the facades of temples once extant at Monte Alban. Above the doorways there is often a niche within which rests an elaborate incense burner (funerary urn). Carved and plain slabs close the tombs off from the antechambers. The interiors of the tombs are mainly rectangular, with deep wall niches within which rest pottery and other offerings to the dead. Most often the tomb was occupied by a single person surrounded by ceramics and other items that presumably belonged to the person during his or her



Fig. 6-17. Classic-period stelae at Monte Alban showing conquests. The left-hand monument shows a captive figure standing on top of a glyph that indicates the person's hometown.

lifetime. Again, the remarkable incense burners are highly characteristic of these offering groups. Occasionally, murals decorate the tomb walls. Some of the most interesting of these paintings were found in Tombs 104 and 105. In each case Caso and Miller have both noted certain similarities to the mural art of Teotihuacan in the lines of gaily costumed figures with speech scrolls who parade around the walls. Miller (1988) has analyzed the Tomb 105 scene, which shows four couples exiting from the tomb, and believes that one of the women is Maya. Taken as a body, the mural art seems to show an indigenous regional Mesoamerican style. It is surely Oaxacan in origin, although it may share certain ideas and conventions in common with other Mesoamerican cultures.

A hint of the elaborate ritual that surrounded the lives and deaths of the elite at Monte Alban is given by a remarkable group of figurines that were found above Tomb 103 (see Paddock 1966b, fig. 151). A dead man is represented by a mask set on a miniature pyramid. An orchestra and five priests surround the mask, while another person impersonates the old fire god. This figurine group is probably a record of a memorial ceremony for someone of great importance who was already buried, perhaps for the person interred in Tomb 103. As is the case of the group of Olmec figurines from

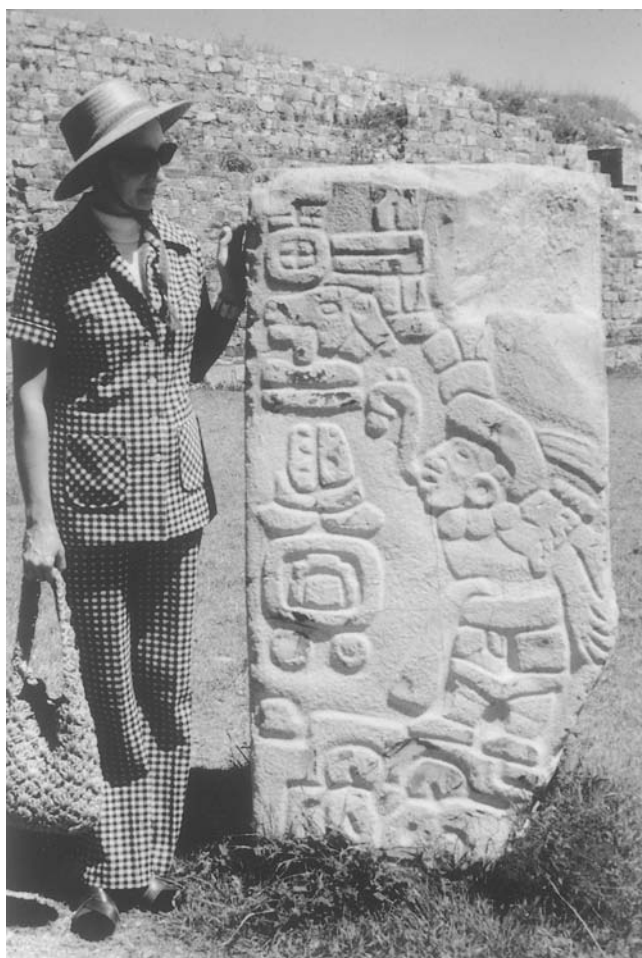


Fig. 6-18. Classic-period stela at Monte Alban showing a captive. A date in the Zapotec calendar is noted in front of the person, perhaps indicating the date of conquest.

La Venta, it is as close as we will ever get to a “snapshot” of the culture in action.

Crafts and Specialists. The amounts of ceramics found around Monte Alban are enormous even by Mesoamerican standards. Much of the material was made for household use, but a great deal of specialty pottery was also produced. A polished gray ware is the most characteristic pottery of Monte III. Teotihuacan “flower vases” (*floreros*) and other forms appear in period IIIa, along with significant and persistent amounts of a trade ware called Thin Orange. Studies have shown that Thin Orange was probably made in an area that lies between Puebla and Oaxaca. Other Teotihuacan forms were also made from local clays. The baroque elaborate incense burners were almost certainly made by craft specialists. Aside

from these urns, period IIb represents a simplification of period IIIa ceramics. During the late phase, Teotihuacan similarities disappear entirely from the ceramic complex.

Other crafts are not particularly well developed, especially when measured against the exquisite productions of the later Mixtec. Some carved jades come from tombs that are relatively simple in technique and motif. The best were imports from the Maya Highlands.

Social Structure and Religion. The sumptuous palaces and what are apparently dynastic records at Monte Alban imply a hereditary elite. Ancestor worship in some form is indicated by the funeral complex and the nature of the tombs. The reinforcement of social status by religious sanction seems to have been in operation among the Zapotec as it was among the Classic Maya. Zapotec rulers are clearly shown as receiving divine aid in their activities, and their burial places under and near temples indicate that when they died they assumed their places in the supernatural order.

Very specific ideas about the nature of Monte Alban III religion can be gained from a study of the incense burners and murals (fig. 6-19). This has been masterfully done by Caso and Bernal (1952). Some thirty-nine gods have been identified, most with calendar names derived from the sacred almanac. Eleven of these gods are female. Nearly all of them are grouped around several major themes that are strikingly similar to those defined for Teotihuacan. One theme is that of the rain-and-lightning- or storm-god complex. The jaguar is associated with this group and is at least partly symbolic of Cocijo, the rain god. Another cluster of deities is organized around the maize plant. The maize god himself, Pitao Cozabi, took the form of a bat. A number of serpent gods include Quetzalcoatl in his guise as the wind god. Bird-masked gods, goddesses, the "flayed god" Xipe Totec, and an opossum deity make up the rest of the period III Zapotec pantheon. Nearly all of these deities were still worshiped at the time of Spanish contact, and therefore there is a certain amount of information that comes down to us from the early Christian missionaries. It is again clear that there is an extraordinarily strong continuity between the culture of Monte Alban III and that of the contact-period Zapotec. On the other hand, there are also enough distinctions to make clear that period III culture may have been somewhat more elaborate than that of 1521.

Relations with Teotihuacan or the Nuiñe? The fact that we have two powerful and culturally vigorous states coexisting in Mesoamerica is of interest. Even more interesting is the question of their relationships.

It used to be thought that the influences in ceramics of Monte Alban II and IIIa indicated a very powerful general influence on Monte Alban from Teotihuacan. In reviewing the nature of the contacts, however, it is remarkable to us how few and ephemeral they are. Principally, outside influence assumes the aspects of Teotihuacan ceramic forms made from local wares,

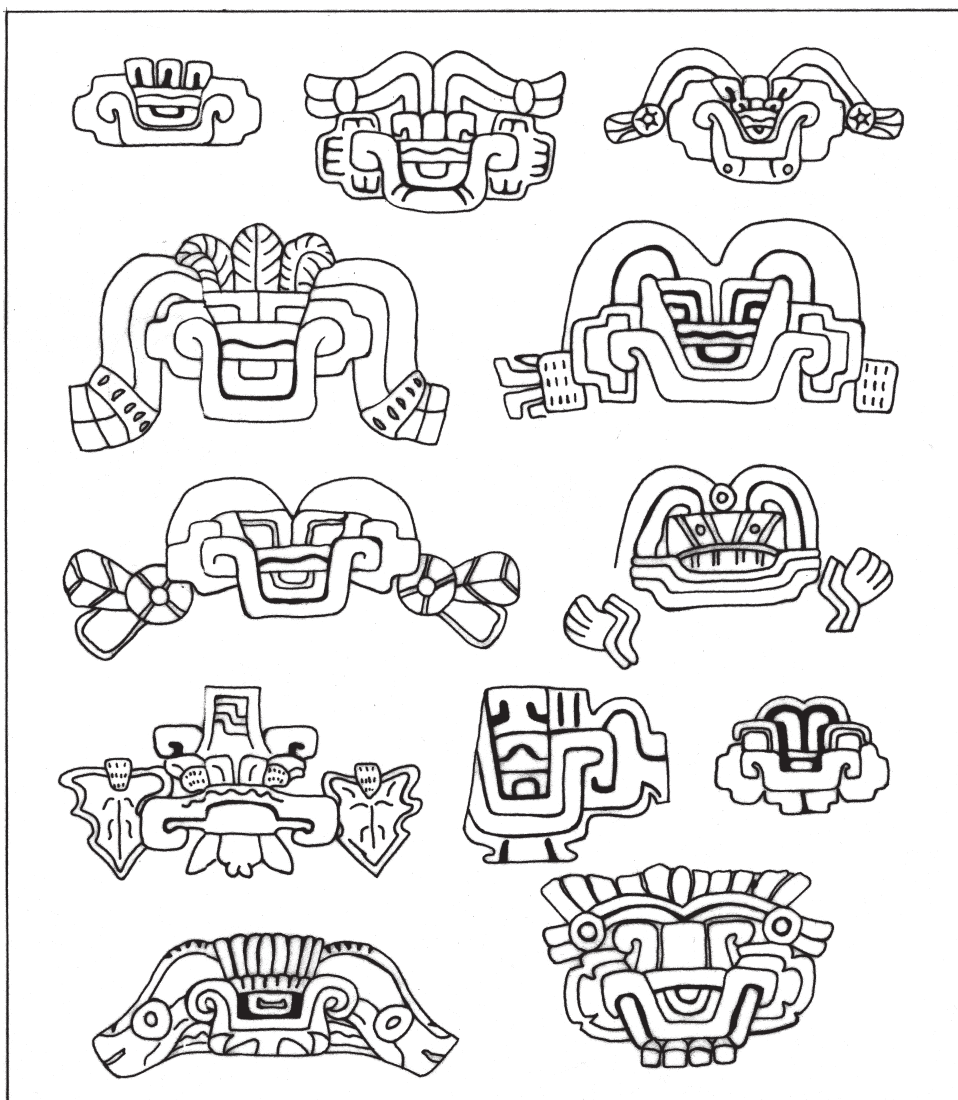


Fig. 6-19. Classic-period glyphs, mainly from incense burners, at Monte Alban.

the import of Thin Orange pottery, and reminiscent stylistic links in architecture and mural art. These links and influences are quantitatively small. Furthermore, John Paddock (1966b) has noted that the Thin Orange ware came from a zone intermediate to Teotihuacan and Monte Alban, a zone called the Ñuñe, or "hot land." Thin Orange was exported from about A.D. 200 to 500. Paddock has defined a style named after the origin



Fig. 6-20. Classic-period palace just outside of the main civic center at Monte Alban.

area of the pottery. It is also intermediate to both Teotihuacan and Monte Alban in its style of sculpture and its glyphic system. Paddock argues that the traits noted above were most likely not transmitted directly from Teotihuacan but through the intermediary culture of the Nuiñe. This zone was apparently a buffer area under the control of Cholula.

This still leaves us with the problem of the “Oaxacan Barrio” at Teotihuacan (Paddock 1983). Apparently the Oaxacan group was of relatively high status, and they represented an essentially autonomous political and cultural zone. G. L. Cowgill (pers. comm.) comments that although Monte Alban may have been independent of Teotihuacan, the two states were certainly not on a par. Teotihuacan undoubtedly prevented Monte Alban from extending its area of influence much beyond the Central Valley of Oaxaca (fig. 6-20).

A study by Marcus has clarified the situation considerably. Stone monuments at Monte Alban define something of the relationship between the two cities from the Oaxacan point of view. Four sculptures show the probably diplomatic visit of persons from Teotihuacan to Monte Alban sometime during period IIIa (Marcus 1980, 1983d). In the scenes the envoys travel from a Teotihuacan-style temple, confer and burn incense with Zapotec leaders, and are identified by their personal names and by special tassels. Relationships

thus seem to have been on the basis of an uneasy alliance or detente rather than dominance and subordination.

Period III is the apogee of Monte Alban and also of Zapotec culture. The city existed and grew in the midst of ever-extending populations and subordinate centers. The nature of the probable relationships between the rulers and the mass of the population has been very well described by Paddock:

Monte Alban was a place electric with the presence of the gods. . . . Every temple stood over half a dozen temples of centuries before. Buried in the great temples were ancient high priests of legendary powers, now semi-deified; centuries of accumulated mana in ceremonies, centuries of power and success lay deep inside that masonry. But with their own humble hands, or those of their remembered ancestors, the common people had made the buildings. No whip-cracking slave driver was needed. The satisfaction of helping to create something simultaneously imposing, reassuring, and beautiful is enough to mobilize endless amounts of human effort. (Paddock 1966b, 153)

And yet at the end of period IIIb, about A.D. 700, Monte Alban was abandoned by rulers and ruled.

Summary

Teotihuacan, Cholula, and Monte Alban were the urban centers of early highland civilizations. Later cities such as Tula and Tajín were either small and provincial places at the time of Teotihuacan's greatness or did not exist (Xochicalco). Teotihuacan, in this view of things, was probably not the overwhelmingly dominant city that some have portrayed. It exerted enormous influence, but there were strong regional cultures outside its homeland that resisted or assimilated its influence. Cholula was most susceptible to this influence, being physically close. Monte Alban was apparently safe from domination behind its mountain walls. The relationship between the Oaxacan city and Teotihuacan must have been an alliance at the most. The outposts of Teotihuacan, such as Kaminaljuyu, depended largely on the good will of the states of the Gulf region and the Oaxacan highlands. In the Maya Lowlands, Teotihuacan apparently took more of a direct hand in the regional politics, operating through a collaborationist ruler at Tikal as well as through traders. However, even this intervention did not place Teotihuacan in absolute control of a Maya regional state. Perhaps this is the explanation for the foreigners' quarters at Teotihuacan. They were in the nature of embassies and trade missions rather than delegations from subservient states. In short, impressive as it was, Teotihuacan had rival centers that were beyond its power to dominate. The time came when Teotihuacan, weakened by whatever factors, found itself threatened by new states near and within its homeland. This situation set the stage for the sequence of collapses and transformations that attended the ends of these first highland civilizations.

CHAPTER 7

TRANSFORMATIONS

Epi-Classic Cultures, the Collapse of Classic Cultures, and the Rise and Fall of the Toltec

And they left behind that which today is there . . . the so-called serpent column. . . . And the Tolteca mountain is to be seen; and the Tolteca pyramids, the mounds, and the surfacing of Tolteca [temples]. And Tolteca potsherds are there to be seen. And Tolteca bowls . . . And many times Tolteca jewels.

Sahagún 1961, 10:165

Then there was a change of the katun, then there was a change of rulers. . . . Whereupon a numerous army was seen, and they began to be killed. Then a thing of terror was constructed, a gallows for their death. Now began the archery of Ox-halal Chan. Then the rulers of the land were called. Their blood flowed, and it was taken by the archers.

Chilam Balam of Chumayel 1967, 76–77

APOCALYPTIC VISIONS ARE more convincing and easier to sell than they used to be. Even in the recent past, however, when archaeologists talked of the great disasters of prehistory, the spectacular catastrophic aspects tended to be emphasized, and those features that illuminated the events as transformations were given short shrift. The remarkable successes of ancient cultures tended to be overshadowed by the sense of impermanence lent by the foreknowledge of their doom. It is significant that many of the disasters of the past led also to cultural reformulations and ultimately to new heights of cultural and social success. On the other hand, there is no question that some collapses led a kind of devolution that resulted in drastic simplifications of cultural forms. Therefore, to truly understand what happened, it is necessary to take each of the events on its own terms.

Simply stated, Mesoamerican civilizations collapsed when they had overdeveloped in unbalanced and inefficient directions. G. L. Cowgill (1979) comments that, like ancient China, at least some Mesoamerican cultures expanded to produce “larger and ever less efficient bureaucracy, higher taxes (especially for peasants), increasing diversion of tax revenues into the pockets

of local officials, and decreasing availability of revenue for state purposes.” Whatever the specifics, these civilizations became fatally vulnerable to various stresses exerted by natural or cultural factors or by combinations of the two. Prehistorians have been too prone to attribute these rapid cultural transformations to single causes. As an example, at one time or another it has been fashionable to attribute the fall of Maya civilization to the single factors of soil exhaustion, moral collapse, climatic change, grass invasion of farmlands, military invasion, disease, or earthquakes. In recent years, however, archaeologists have fortunately been exposed to the revivifying effects of systems theory, feedback models, general model building, and multiple causation. At the same time information about cultural and social collapses has become more complex and sophisticated. It has been increasingly clear that multiple factors were involved in all of these events. Therefore, the latest explanations tend to be complex and multifactored. With these points in mind, let us approach the subject of the fall and transformations of the Classic Mesoamerican civilizations.

The Collapse of Teotihuacan

The explanation that one advances for a society’s collapse is obviously affected by the perspective one assumes about the nature of that society. Teotihuacan, with the aid of recent research, looks increasingly like a gigantic regional state expanded to an empire, with other regional states bound to it by tribute and alliance systems. Its heartland was the central Mexican plateau and especially the Basin of Mexico. The social and political structure at the final point of supreme crisis seems to have been a somewhat secularized form of kingship, bolstered by considerable military power. A noble administrative class controlled highly organized kinship or “house” groups living in city wards, which were the basis of the society. These kinship units were probably occupationally specialized, with most of them including farmers. Teotihuacan’s power was largely derived from this highly organized and large mass of about two hundred thousand people and from the control the city exerted over various economic resources outside of the heartland. In W. T. Sanders and Barbara J. Price’s terms (1968), the Teotihuacanos had put together the Central Mexican Symbiotic Region within the context of a single political and social system. The gradual withdrawal of Teotihuacan influence from outlying parts of Mesoamerica about A.D. 550 would indicate that the great city had more pressing problems nearer to home than the maintenance of an imperial system.

Recent work at Cholula, around Monte Alban, and especially in A. Garcia Cook’s “Teotihuacan Corridor” (1981), demonstrates that Teotihuacan was not entirely alone in its sophistication during its terminal phase of A.D. 500 to 650. However, it now appears that Tula, the later capital of the Toltec, was not in existence until ca. A.D. 800. Therefore, we can now

discard the notion that the ancestors of the Toltec had much to do with the demise of Teotihuacan. Similarly, the suggestion that Xochicalco, to the southwest, was powerful and ultimately hostile enough to block Teotihuacan's access to western Morelos and the Balsas River area beyond it is no longer viable (Hirth 1984). This fortified city was not an urban center before A.D. 650. Therefore, we must regretfully discard the suggestion by Sanders (1965) that an early "triple alliance" among Tula, Xochicalco, and Cholula may have cut off Teotihuacan. As we have seen, Monte Alban was certainly independent of Teotihuacan, although in contact with it. Garcia Cook reads the Tlaxcala data for the period immediately before A.D. 650 to mean that there was a move toward autonomy by several important regional states of the region. The principal cities of this "Teotihuacan Corridor," the major commercial route to the Gulf and to the south, dominated and cut it. He further suggests that the "Olmeca-Xicalanca" of the later chronicles took over Cholula and established Cacaxtla as a capital. Fortresses and fortified cities were established in the zone (Garcia Cook 1981).

According to this perspective, Teotihuacan's world may have ended with both a crack and a squeak. Post-collapse Oxtoticpac-Xometla-phase materials of Teotihuacan are found within a much shrunken and perhaps devastated city. Although Rene Millon (1988) interprets the evidence otherwise, the four hundred instances of fire in structures along the Street of the Dead, and the two hundred occurrences in other parts of the city, tie together with other data to suggest the systematic looting and destruction of the city. An addition to this evidence is a dismembered skeleton in a room of the burned-down main palace in the Citadel (Cabrera, Rodriguez, and Morelos 1982). Millon (1988) notes other examples of dismembered bodies in the Citadel palaces. Much of the destruction has the characteristics of an "inside" job. Caches of sacred and valuable items were dug from their hiding places, and tombs were systematically looted. Both of these hidden depositories yielded luxury pottery, perhaps textiles, and certainly the carved jade jewels that were the highest form of Mesoamerican wealth. Deliberate destruction of religious symbols and other artifacts bespeaks a violent end to Teotihuacan. More important, and more basic, were the losses of commercial wealth beforehand and, later, the loss of prime farmland in and around the basin.

Ultimate explanations of Teotihuacan's downfall still elude us. It may be that the very success of Teotihuacan in developing and spreading a new urban order of society and politics led to the rise of rivals. These rivals, newer and less bound by tradition, may have had the edge on the older, more ponderous regional-imperial capital. Their motivation to overthrow the mother city may have been a drought, as suggested by P. Armillas (1950) and bolstered by recent reconstructions of climatic history. Further, the foreigners in the city may have intrigued with dissident factions against

the ruling groups. In any case it seems clear that a few hundred dusty barbarians from the north would have had a very difficult time making a serious impression on a well-organized city of two hundred thousand, as was once suggested. It is also clear that internal weaknesses and rival military powers of equal sophistication were necessary to bring down Teotihuacan, looting and destroying it by fire.

The lack of urban bases and forts would not necessarily be a handicap to professional military groups that could operate from camps and groups of small villages. The idea of such groups operating during the period of collapse and establishing themselves in the Epi-Classic states afterward is developed in the following section.

The collapse of the city and its political system had several important effects. One of the most important was the release of inhibitions on regional centers that had previously been suppressed by Teotihuacan. Jeffrey Parsons's (1974) surveys in the Texcoco and Chalco sides of the basin show a dramatic resurgence of population after Teotihuacan's fall. Texcoco was established shortly thereafter. Reciprocally, within the Valley of Teotihuacan, population fell from two hundred thousand at A.D. 650 to about thirty thousand at A.D. 900. During this time the large center of Azcapotzalco, on the western side of the lake, showed a growth spurt. The expansions of Tajín, Xochicalco, and Cholula have already been noted.

Another effect was that of a diaspora of Teotihuacan craftsmen over Mesoamerica. It is no coincidence that a second, late injection of Teotihuacan influence appears in the Maya Lowlands at this time. A small temple, possibly dedicated to the Teotihuacan storm god, was built near the most important precinct in Tikal. Along with the craft technologies that no doubt were spread in this manner, political expertise may also have been carried by former civil servants and nobility of Teotihuacan. In any case the period immediately following the central Mexican collapse was one of reverberating clashes and military competition among expanding and elaborating city and regional states. It was also a time of opportunity for groups that had heretofore been on the fringes of the major cultures and major states. Groups such as barbarians from the north penetrated southward into the basin and beyond. The Otomí could have come in at this time. Within the jumbled and locked-up valley of northern Oaxaca, Mixtec states were being formed and reformed. Certain groups located in the Gulf Coast zone were in contact with the Classic Maya and began to press them perhaps as early as A.D. 750. It now seems that the use of military mercenaries became widespread, with central Mexican groups brought in by the Maya and Maya-Gulf Coast groups penetrating the Central Mexican Highlands. There is no doubt that the Classic Maya lasted longer than Teotihuacan. The wonder is not that they eventually fell but that, given their internal weaknesses, they lasted as long as they did in the unsettled conditions after Teotihuacan's collapse.

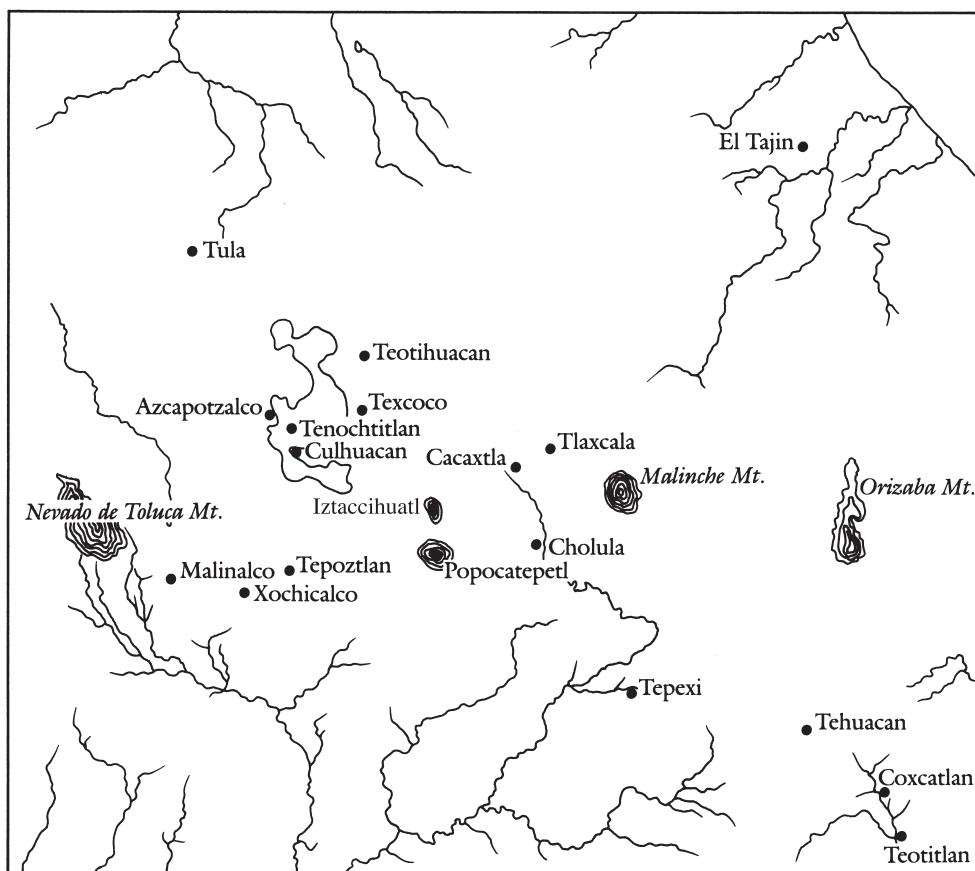
Epi-Classic States in Central Mexico

Following the collapse of Teotihuacan as a supraregional capital, a number of regional states arose whose capitals were usually fortified cities (map 7-1). In reality Teotihuacan remained a very large center of population itself, although lacking the political dominance it had exercised before. Without the restraint of a superpower, regional elites established themselves in strategic positions and engaged in expanding their power bases. These regional states and cultures represent both a transitional and a new type of society: the predatory conquest state, the form of which was ultimately developed by the Aztec into an empire. The Epi-Classic, as K. Hirth (1984) and others have defined it, is mainly focused on central Mexico, and especially on the sites of Xochicalco, Cacaxtla, Teotenango, Cholula, and several others less well known. The concept might logically be extended to include the Tajín state, the city of Tula in its first stages, and the regional states of the Puuc and the northern plain of Yucatan. Here we will only consider Xochicalco and Cacaxtla, for which we have new information. The other, contemporary sites and regions are considered under other headings.

Xochicalco

This city is located in some rather grim terrain of western Morelos, and, in fact, on some of the worst agricultural land available. However, it appears that this may have been one of the reasons for the choice of location; its availability in a situation of powerful neighbors who already occupied the best lands. Hirth's report on his intensive project has developed and synthesized his own work and that of his predecessors (Hirth 1984, 2000). The following account depends largely on his published material.

The substantial Classic-period population around the hilltops of what was later Xochicalco did not support an urban center or public architecture other than a few temples. After A.D. 650 a fortress city was built on top of a series of adjacent hills, eventually covering a zone of 4 square kilometers (1.5 square miles). A series of five extensive terrace systems sculpted the main hill for human occupation, and an internal road system connected the various parts of the city. The topmost zone, with the famous Temple of the Plumed Serpent, was a very private place with limited access. The remains of twenty-six plaques run around the top of the temple's platform (figs. 7-1, 7-2). Each plaque shows a ruler with a speech scroll, a variable element (a place-name), and two additional glyphs—the false-teeth glyph and a quartered ball. These last two glyphs indicate tribute. Therefore, it appears that Xochicalco conquered and extracted tribute from twenty-six different places. Other parts of the artistic program indicate aggressive militarism and possibly the presence of warrior societies akin to those in later Aztec times. A nearby extensive palace was the residence of the governing elite. Three stelae were found in this group, with depictions of the rulers



Map 7-1. Central Highlands of Mexico and lowland Veracruz, showing locations of Epi-Classic- and Toltec-period sites.

of Xochicalco in an art style reminiscent of that of Tajín on the Gulf Coast. These monuments also mention conquest and tributaries as well as other matters.

The second terrace down was evidently a public zone. It had a large temple and several public, perhaps administrative, buildings. A formal road net that apparently tied the surrounding countryside to the city as well as tying parts of the urban center together ends at the public zone. Below this zone were three more broad terrace systems that supported residential compounds and some small gardens. The whole city was surrounded by a defensive wall and moat. Population estimates given by Hirth fall between nine thousand and fifteen thousand by A.D. 800. An indication of the precarious times



Fig. 7-1. Sculptured base of the Temple of Quetzalcoatl at Xochicalco, Morelos, Mexico, on the highest hill within this fortified city. The hybridized style is characteristic of civilizations of this period of transition from Classic to Early Postclassic.

in which the city existed is at least one citadel, made defensible by moat and wall, on an adjacent hilltop.

Eventually, Xochicalco dominated nearly all of western Morelos, with smaller administrative centers tributary to it. The nature of the elite may be indicated by the art style of the uppermost architecture and stelae, which have both some Maya and some Gulf Coast features. Hirth interprets the data to indicate a confederacy. However, such a political structure is a fairly loose agreement among equals or near equals. The conquest and tribute imagery records contradict such a beneficent model. The mass of the population lived in modified apartment compounds of the same kind found at Teotihuacan. Several of these were excavated and were found to contain buried debris as well as the skeletons of men, women, and children. In some cases dismembered body parts were piled up, then the residence was burned down over them. By A.D. 900 Xochicalco had been destroyed, and it never recovered. Hirth notes that Cacaxtla, which was a contemporary state and may have been a rival, is therefore under suspicion. However, an internal revolt by Xochicalco's conquered and tributary cities and towns is also a possible cause of Xochicalco's fall.

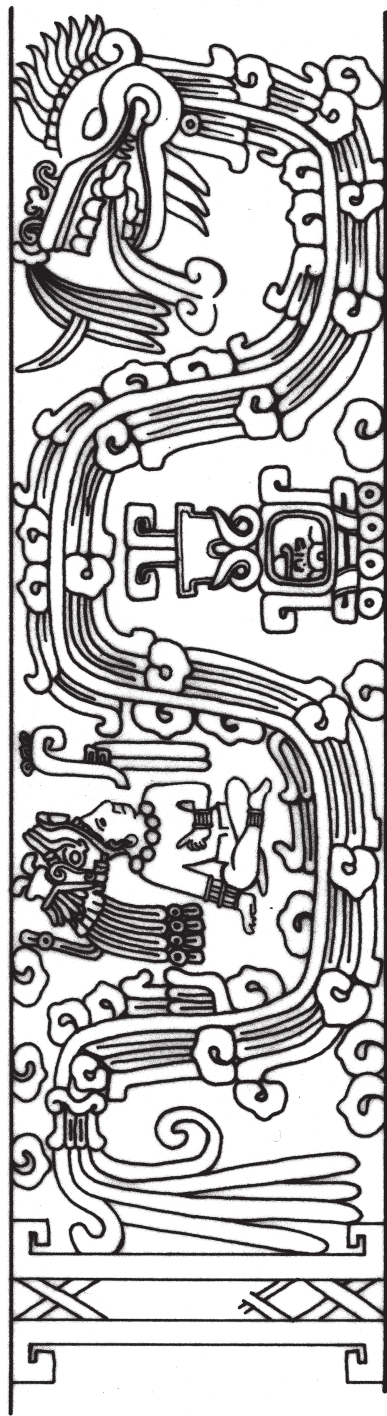


Fig. 7-2. A drawn rendition of part of the sculpture from the Temple of Quetzalcoatl at Xochicalco. The feathered serpent writhe among seated human figures and hieroglyphs that may designate the rulers of the zone and name their seats of government.

Cacaxtla

This fortified hilltop city, established after A.D. 650, was the capital of a regional kingdom ruled by a people called the Olmeca-Xicalanca in the later chronicles (Garcia Cook 1981). Situated as it was in the "Teotihuacan Corridor," this fortress-capital may have interrupted Teotihuacan's commercial and communication route to the Gulf Coast. The Olmeca-Xicalanca are said to have come from the Gulf Coast area—specifically, the Chontal Maya region of Xicalango—and to have been in the eastern Mesa Central considerably earlier (Garcia Cook 1986). Thus, they may have been military opportunists who seized a strategic place and advantage at the moment of disorganization created by the fall of Teotihuacan. They apparently also took control of the much older city of Cholula.

The site, as presently known, consists of a hilltop modified to accommodate ten massive platforms that sustained palace and temple structures as well as food-storage facilities. The latter are of a biconical shape and adobe construction (*cuexcomates*) still in use by present-day farmers of the region (Sánchez del Real 1987). All but one of these platforms are on a north-south axis in the site. The platforms, in turn, are protected by a series of dry moats that are up to 24 meters (80 feet) wide and 9 meters (30 feet) deep; at least one of the moats is backed up by a rampart. The schematic map of Cacaxtla also shows terracing down the hillsides, but the levels apparently are not connected in the manner that made Xochicalco so formidable.

The now-famous paintings of Cacaxtla, located on platform II, were found by archaeologists exploring a looter's tunnel. The murals are, in a word, extraordinary (fig. 7-3). The brilliance of the well-preserved colors and figures indicates what we have lost in so much of Mesoamerican civilization. The style combines central Mexican style, reminiscent of the sculpture of Xochicalco, with features of Classic Maya painting as known from Bonampak. Dancing, pirouetting figures dressed in jaguar, bird, and other costumes are framed by elongated feathered serpents, jaguars, and marine animals. Glyphs reminiscent of those of Xochicalco embellish and, presumably, explain the action. A ghastly battle scene between "bird-men" and "jaguar-men" shows all too graphically exposed intestines, severed heads, blood, and other results of violence. Garcia Cook (1986) suggests that this scene may record a battle which gave the rulers of Cacaxtla control over the area.

Modeled stucco bas-relief has an even greater resemblance to Maya art, and one fragment could be taken entire from a Maya stela (portico of Edificio E). Further, Sanchez del Real illustrates a modeled stucco human portrait head that is startlingly like those found in the Maya Lowlands. A seated human figure has a great resemblance to one found at Yaxchilan from about the same period. A "jealousie" window made of stucco is nearly a duplicate of one found at the Maya site of Uaxactun (Sánchez del Real 1987).



Fig. 7-3. A figure from the Epi-Classic murals at a palace in Cacaxtla, Tlaxcala, Mexico, a fortified city to the east of Xochicalco. This particular figure seems to be Maya, although there are human figures from both the highlands and the lowlands in these paintings.

Evidently Cacaxtla fell on evil days about A.D. 900 and was abandoned by A.D. 1000. Garcia Cook (1981) thinks that the Olmeca-Xicalanca were driven out and thereafter concentrated in the southern zone around Cholula for another century or so.

New World Condottieri?

These and other Epi-Classic states lasted a considerable time and evidently were partly the result of the intrusion of new ideas. The author suggests

that the groups from the Gulf Coast, including the Olmeca-Xicalanca, may have been military predators and mercenaries somewhat like the *condottieri* groups of fourteenth-century Italy. Sometimes they were employed by central Mexican states, and perhaps Teotihuacan began the practice, given the presence of trading groups in its capital city. At other times, as during the disorganization of the collapse of Teotihuacan, they may have tried to achieve legitimacy (always a problem for mercenaries) by establishing themselves as intrusive elite at places such as Xochicalco and Cacaxtla. Perhaps some of the raids into the Classic Maya Lowlands were simply long-distance predatory strikes launched by these centers. Certainly, as we shall see, the probable mercenary status of the Toltec in Yucatan was converted by them into full-blown permanent power. In this case the mercenaries may have turned on their presumed employers, the Epi-Classic Puuc cities, and overthrown them. The political fragmentation and general social chaos following the Teotihuacan collapse in A.D. 650, and then the southern Maya collapse in A.D. 850, gave these opportunists plenty of chances to improve their own statuses and positions. It is to the second great catastrophe, that of the Classic southern Maya, that we now turn.

The Classic Maya Collapse

If we accept the idea of a forced dispersal of Teotihuacano throughout Mesoamerica in the late seventh century, then the first inklings of trouble for the Maya are in the appearance of the Teotihuacan storm god on a Late Classic polychrome plate and on a stela at Copan. Pushing this line of thinking too far implies that the fall of Maya civilization was the result of external causes, which is probably not the case at all. A conference on the Maya collapse developed an explanation which combines external and internal stresses with known historical events (Culbert 1973). T. P. Culbert brought the model up to date more recently (1988).

According to what we now know, Maya civilization began reaching a series of regional peaks about A.D. 650. By A.D. 830 there is evidence of disintegration of the old patterns, and by A.D. 900 all of the southern lowland centers had collapsed. An understanding of the Maya apocalypse must be based in large part on an understanding of the nature of Maya civilization. During the Terminal Classic period, A.D. 750 to 900, cultural patterns of the lowlands can be briefly characterized as follows. Demographically, a high peak had been reached at least as early as A.D. 600. This population density and size in turn led to widespread adoption of intensive forms of agriculture and the establishment of permanent farmsteads in the countryside, involving techniques that had been developed in the Late Formative. Hills were terraced, swamps were drained and modified, small water impoundments were made by the hundreds, and land became so scarce that rock walls were built both as boundaries and simply as the results of

field clearance. Berms were also created, some apparently to guide the flow of water down the hills. These masses of people were also organized for political purposes into a variety of regional states and city-states, both of which fluctuated in size. The former were more than simple aggregations of cities and were characterized by hierarchical and other complex relationships among them.

Society was organized on an increasingly aristocratic principle by A.D. 650. Dynasties and royal lineages were at the top of the various Maya states and commanded most of the resources of Maya economic life. Most of the large architecture of the cities was for their use. Groups of craft specialists and civil servants supported the elite, with the mass of the population engaged in either part-time or full-time farming. Trade was well organized among and within the states. Military competition was present but was controlled by the fact that it had become mainly an elite-class and prestige activity that did not greatly disturb the economic basis of life. Thus, Maya culture at the ninth century A.D. seems to have been well ordered, adjusted, and definitely a success. Yet a devastating catastrophe brought it down.

Characteristics of the Collapse

Sometimes it seems that the accumulation of weighty theoretical formulations purporting to explain the collapse of Maya civilization will eventually, instead, cause the collapse of Maya archaeology. A refreshingly skeptical and clear-sighted book by John Lowe (1985) reviews the major theories and tests them as well. The following section will not be as thorough but, it is to be hoped, will be equally convincing. A brief characterization of the collapse includes the following features:

1. It occurred over a relatively short period of time: 75 to 100 years.
2. During this time the elite class lost power and disappeared, as reflected in the abandonment of palaces and temples and the cessation of manufacture of luxury goods and erection of stelae.
3. There was a rapid and nearly complete depopulation of the countryside and the urban centers.
4. The geographical focus of the first collapse was in the oldest and most developed zones, the southern lowlands and the intermediate (Rio Bec–Chenes) area. The northern plains and Puuc areas survived for a while longer.

In other words, the Maya collapse was a demographic, cultural, and social catastrophe in which elite and commoner went down together. Drawing on all available information about the ancient Maya and comparable situations, the 1970 Santa Fe Conference developed a comprehensive explanation of the collapse. The model has been continually updated with new data and theories. This explanation depends on the relatively new picture of the

Maya summarized above. That is, we must discard any notion of the Maya as the “noble savage” living in harmony with nature. Certainly, the Maya lived more in tune with nature than do modern industrial peoples, but probably not much more so than did our nineteenth-century pioneer ancestors. As we shall see, some dissonance with nature was at least partly responsible for the civilization’s failure. It should be noted that data developed since the conference strengthens some of its assumptions and weakens others. Therefore, the explanation that follows is a modified version of that which appears in the report of the Santa Fe Conference (Culbert 1973).

Stresses. Maya society had a number of built-in stresses, many of which had to do with high populations in the central and southern areas. Turner’s and other studies (Turner 1974; R. E. W. Adams 1977) indicate that from about A.D. 600 to 900 there were about 168 people per square kilometer (435 per square mile) in the Rio Bec zone. The intensive agricultural constructions associated with this population density are also found farther south, around Rio Azul, and within 30 kilometers (19 miles) of Tikal. They are also to be found to the east in the Belize Valley, and there are indications elsewhere to the south that high populations were present. Hubert R. Robichaux’s work (1995) indicates that the Three Rivers Region population density was about 177 per square kilometer (458 per square mile) at about the same time. According to Frank P. Saul’s studies of Maya bones from the period (1972, *et passim*), a heavy load of endemic disease was carried in the population, including malaria, yellow fever, syphilis, and Chagas’ disease, the latter a chronic infection that leads to cardiac insufficiency in young adulthood. Chronic malnutrition is also indicated by both Saul’s and D. Gentry Steele’s studies (Steele 1986). Taken altogether, these factors indicate a precarious health status even for the elite. Average lifespan in the southern lowlands was about thirty-nine years. Infant mortality was high; perhaps as many as 78 percent of Maya children never reached the age of twenty. Endemic disease can become epidemic simply with a rise in malnutrition. In other words, the Maya populace carried within itself a biological time bomb that needed only a triggering event such as a crop failure to go off.

With population pressing the limits of subsistence, management of land and other resources was a problem, and one that would have fallen mainly on the elite. If food were to be imported or if marginal lands were to be brought into cultivation—by extensive drainage projects, for example—then the elite had to arrange for it to be done. There were certain disadvantages to this arrangement. Aristocratic or inherited leadership of any kind is a poor means to approach matters that need rational decisions. One need only consider the disastrous manner in which seventeenth-century European armies were mishandled by officers whose major qualifications were their lineages. There is a kind of built-in Peter Principle in such

leadership: one is born to his level of incompetence. Maya aristocracy was apparently no better equipped to handle the complex problems of increasing populations than were European aristocrats. There were, no doubt, capable and brilliant nobles, but there was apparently no way in which talent could quickly be taken to the top of society from its lower ranks. John Lowe's (1985) model of the collapse of Maya civilization emphasizes the management-administrative aspects of the problem and essentially considers the collapse as an administrative breakdown.

There are also signs in the Terminal Classic period of a widening social gulf between elite and commoners. At the same time, problems were increasing in frequency and severity. The elite class increased in size and made greater demands on the rest of Maya society for its support. This created further tensions.

Droughts and associated matters. Intensive agriculture led to increased crop yields but also put Maya food production increasingly at hostage to the vagaries of weather, crop disease, insects, birds, and other hazards. Marginal and complex cultivation systems require large investments of time and labor and necessitate that things go right more often than not. A run of bad weather or a long-term shift in climate might trigger a food crisis. Recent work on tree rings and weather history from other sources indicates that a Mesoamerican-wide drought may have begun about A.D. 850. In addition there are periodic outbreaks of locusts in the Maya Lowlands.

Richardson Gill's (2000) long and detailed examination of climatic history and the patterns of Maya collapse has led him to conclude that the Maya suffered from dry periods of varying intensities throughout their history. He explains the end of the Late Formative Mirador Basin cities, the hiatus, and the final collapse of Maya civilization by this means. Reconstruction of the climatic history of the area has been greatly advanced by the work of D. A. Hodell and his colleagues, who have taken lake cores from various places in the lowlands. On the basis of changes in soil chemistry and vegetation, they have built up a very convincing record of drought and dry-weather events (Hodell et al. 1995, 2001; Curtis et al. 1996). These data largely confirm that there were major, catastrophic droughts beginning in A.D. 810, 830, and 880—generally the same dates reconstructed by Gill.

In a recent paper Yoav Me-Bar and Fred Valdez, Jr. (2003) have pointed out that droughts in the area are not really periodic, and therefore predictable, but are random events. Consequently the Maya would have been unable to develop a long-term record that could predict droughts. Most importantly, they would have no incentive to develop long-term, large-scale food-storage systems. Thus, the Maya lacked the ameliorating effects of the kind of food reserves so successfully developed by the Andean civilizations, especially the Inca.

Robichaux (2002) has evaluated the data and the drought theory and has shown rather convincingly that the matter of water loss was not the only factor in the collapse. Some water-rich cities along the Usumacinta River collapsed early, while others such as Tikal, in harsh and water-deprived environments, lasted a great deal longer. As Valdez has observed, the capitals of the larger regional states might have lasted longer because they would have been like sponges in a puddle. A sponge will soak up and draw in the water and will eventually dry up itself, but it will be the last to do so. Thus, places like Tikal would have had greater access to resources, especially food, drawing it in from subordinate areas. Eventually there would not be any more, but Tikal would last longer than other areas.

These stresses were pan-Maya and occurred to a greater or lesser degree in every region. Whether one opts for the city-state or the regional-state model, competition over scarce resources among the political units of the Maya resulted from these stressful situations. The large southern center of Seibal was apparently taken by a northern Maya elite group about A.D. 830. Evidence is now in hand of military intrusions from north to south at Rio Azul, at the Belize sites of Nohmul, Colha, and Barton Ramie, and at Quirigua in the Motagua Valley. At least at Rio Azul and Colha, a period of trade preceded the raids, presaging the later Aztec *pochteca* pattern. The patterns and nature of the intrusions indicate that the raids were probably from the Puuc zone and that a part of the motivation was to capture populations. Warfare increased markedly along the Usumacinta River during the ninth century A.D., according to hieroglyphic texts and carved pictures from that area.

There are also hints that the nature of Maya warfare may have changed during this last period. A lintel from Piedras Negras appears to show numerous soldiers in standard uniforms kneeling in ranks before an officer (Rands 1973). In other words organized violence may have come to involve many more people and much more effort and therefore may have become much more disruptive. Certainly, competition over scarce resources would lead to an increasingly unstable situation. Further, the resultant disorganization would lead to vulnerability to outside military intervention, and that seems to have occurred as well.

There were also external pressures on the Maya. Some were intangible, in the form of new ideas about the nature of human society as well as new ideologies from the Gulf Coast and central Mexico. The northern Maya elites seem to have absorbed a number of these new ideas. For example, they included the depiction of Mexican Gulf Coast deities, as well as some Mexican-style hieroglyphs, on their stelae. Altar de Sacrificios was invaded by still another foreign group from the Gulf Coast about A.D. 910. These people may have been either truly a Mexican Gulf Coast group or Chontal Maya, who were non-Classic in their culture.

A progressive pattern of abandonment and disaster in the western lowlands is suggestive. Palenque, on the southwestern edges of the lowlands, was one of the first major centers to go under; it was abandoned about A.D. 810. The major Usumacinta cities of Piedras Negras and Yaxchilan (Bird-Jaguar's city) were the next to go, putting up their last monuments about A.D. 825. Finally, it was Altar de Sacrificios's turn about A.D. 910. Clearly, there was a progressive disintegration from west to east, and it seems likely that it was caused by pressures from militaristic, non-Maya groups. These peoples in turn, were probably being jostled in the competitive situation set up after the fall of Teotihuacan and may have been pushed ahead of peoples such as the Toltec and their allies. Perhaps the Epi-Classic states discussed above, as well as some mercenary groups, were involved. In any case it appears certain that these groups were opportunists. They came into an area already disorganized and disturbed and were not the triggering mechanism for the catastrophe but part of the process that followed.

At any one Maya city or in any one region, the "mix" of circumstances was probably unique. At Piedras Negras there is evidence that the elite may have been violently overthrown from within. Faces of rulers on that site's stelae are smashed, and there are other signs of violence. Invasion finished off Altar de Sacrificios. Rio Azul was overrun by Maya groups from the north, perhaps including Toltec allies, as were a number of Maya centers along the Belize coast and down to Quirigua. At other centers, such as the regional capital of Tikal, the elite were apparently abandoned to their fate. Without the supporting populations, remnants of the Maya upper classes lingered on after the catastrophe. At Colha and Seibal, northern Maya attempted to continue the southern economic and political systems while acting as new elites, but they abandoned these attempts after a relatively short time. The general demographic catastrophe and disruption of the agricultural systems were apparently too great to cope with.

In short, ecological abuse, disease, mismanagement, overpopulation, militarism, famines, epidemics, and bad weather overtook the Maya in various combinations. But several questions remain. What led to the high levels of populations that were the basis of much of the disaster?

The Maya were more loosely organized politically during the Late Formative than during the Classic period. The episodes of interstate competition and of Teotihuacan's intervention seem to have led them to try new political arrangements that were more centralized. These seem to have worked well for a time in the case of the Early Classic expansion of Tikal. After the suggested civil wars of the sixth century, there appears to have been a renewed and still stronger development of centralized states, which were probably monarchical.

Using general historical and anthropological experience, Demitri Shimkin (1973) observes that village-level societies approach population control

very differently than do state-level societies. Relatively independent villages are oriented plainly and simply toward survival. There are many traditional ways of population control. Female infanticide is a favorite and was practiced widely even in eighteenth-century England. Use of herbal abortion, late marriage, ritual celibacy, and other means keep population within bounds for a village. A state-level society, on the other hand, is likely to encourage population growth for the benefit of the directing elite. The more manpower to manipulate, the better. In the case of the Maya we have noted a certain megalomania in their huge Late Classic buildings. Unfinished large construction projects at Tikal and Uaxactun were overtaken by the collapse. Such efforts required immense manpower reserves and a simultaneous disregard for the welfare of that workforce. The Maya appear to have shifted gears into a more sophisticated and ultimately maladaptive state organization.

Another question to be considered is, Why did the Maya not adjust to cope with the crises? The answer may lie in the nature of religiously sanctioned aristocracies. Given a crop failure, a Maya leadership group might have attempted to propitiate the ancestors and gods with more ritual and more monuments. This response would exacerbate the crisis by taking manpower out of food production. Inappropriate responses of this sort could easily have been made, given the ideology and worldview that the Maya seem to have held. On the other hand, if the crisis were a long-term drought, with populations dangerously high and predatory warfare disrupting matters even more, perhaps any response would have been ineffectual.

The rapid biological destruction of the Maya is an important aspect of the collapse. From a guessed-at high of 12 million, the population was reduced within 150 years to an estimated remnant of about 1.8 million. The disease load and the stress of malnutritional factors indicate that a steady diminishment of Maya population probably started by A.D. 830 and rapidly reached a point of no recovery. An average increase of 10 to 15 percent in the annual mortality rate will statistically reduce 12 million to 1.8 million in 75 years. Obviously there was not anything like a steady decline, but the smoothed-out average over the period had to have been something of that order, or perhaps the decline began earlier, at A.D. 750, when Maya civilization reached its peak.

The disruptive nature of population declines can be easily understood if one considers the usual effects of epidemics. In such catastrophic outbreaks of disease, those first and most fatally affected are the young and the old. Even if the main working population survives relatively untouched, the social loss is only postponed. The old take with them much of the accumulated experience and knowledge needed to meet future crises. The young will not be there to mature and replace the adult working population, and a severe manpower shortage will result within fifteen to twenty years. Needless to say, much more work on population estimates and studies

of the bones and the general health environment of the ancient Maya needs to be done to produce a really convincing statement on this aspect of the collapse.

A last, although not by any means final, question concerns the failure of recovery. This feature may involve climatic factors and ecological abuse. If shifts of rainfall belts were responsible for triggering the collapse, then the answer might be the persistence of drought conditions until there were too few people left to sustain the Classic cultural systems. As now seems probable, the Maya were confronted with the situation of having overcultivated their soils and having lost too much surface water. Temporary abandonment of fields would lead to their being rapidly overrun with thick, thorny second-growth jungle, which is harder to clear than primary forest. Thus, a diminished population may have been faced with the problem of clearing heavily overgrown, worn-out soils, of which vast amounts were needed to sustain even small populations. Second-growth forest springs up overnight and is even today a major problem in maintaining archaeological sites for tourists.

Another possible answer to the question of recovery is that the Maya may have been loathe to attempt the sort of brilliant effort that had ultimately broken them. Just as they preferred to revert to swidden agriculture rather than maintain intensive techniques, they probably found it a relief to live on a village level instead of in their former splendid but stressful state of existence.

The above is an integrated model of the Maya collapse. It explains all the features of the collapse and all the data now in hand, but it is not proven by any means and in some respects is more of a guide to future research than a firm explanation. If the model is more or less correct, however, it should be largely confirmed within the next twenty years of research. Indeed, this process of confirmation has already begun. The 1970 conference, which developed the model, could explain certain features of the archaeological record only by assuming much higher levels of ancient population than were otherwise plausible at the time. The 1973 Rio Bec work of B. L. Turner (1974) and J. D. Eaton (1975) turned up a vast amount of data indicating that higher levels of ancient populations indeed had been present. Work at Colha (Eaton and Taylor 1984) and Rio Azul (R. E. W. Adams 1999) has indicated the importance of militarism in the process. All of this lends credibility to the model.

D. Webster (1990) has argued that the Copan Valley was different in that its decline lasted until about A.D. 1200 and was a regression to a more comfortable way of life. Without getting into a detailed critique of the errors of fact, logic, and method in this interpretation, it should be pointed out that recent climatic history work in the Copan Valley does indicate a severe drought in the late ninth century A.D.

Delayed Collapse in the North

The vast and very densely distributed centers of the Puuc area survived for a time. These Puuc cities, possibly a regional state with a capital at Uxmal, appear to have turned into predators on the southern cities. As noted before, part of the motivation may have been the capture and enslavement of southern populations. Even so, it seems that large centers such as Uxmal, Kabah, Sayil, and Labna lasted only a century longer than the southern cities. Northern Maya chronology is much more disputed than that in the south, but it now seems likely that outsiders, including Toltec, were in Yucatan by A.D. 900 and perhaps earlier. There are clear indications that Uxmal was absorbing Mexican ideas much earlier. Certain motifs, such as eagles/vultures, show up on Puuc building facades late in the Classic period.

We are now faced with at least three possible explanations of the Puuc collapse: they may have succumbed to the same combination of factors that brought down the southern Maya centers; the Toltec may have conquered them; or a combination of these factors may have been at work (Pollock 1965; Potter 1973). At this time it appears that the northern florescence was partly at the expense of the southern area. R. Gill (2000, 333–49) has reexamined the calibration of the radiocarbon dates from Chichen and has concluded that the site was contemporary with Uxmal. This would put Chichen into the Terminal Classic period and bring it down with its Puuc rivals ca. A.D. 1000. R. Cobos has recently (2004) examined the matter in detail and has concluded that an overlap of early Chichen, Coba, and the Puuc centers (Uxmal et al.) is indicated by his and Charles Lincoln's (1986) data. Cobos outlines two major periods, the Early (about A.D. 750–900, Late Classic) and the Late (about A.D. 900–1050, Terminal Classic). He makes no judgement on the controversy of Toltec invasion. However, as will be seen, evidence for Toltec conquest appears ever stronger and is the favored explanation here.

Chichen Itza, in north central Yucatan, is a center that was allied with the Puuc cities in architecture and probably politically as well. Puuc centers have been found even in the far northeast of the peninsula. At Chichen, Puuc architecture is overlaid and succeeded by Toltec architecture. Unmapped (or unpublished) defensive walls may surround Chichen, and Ian Graham's new map (1992) shows Uxmal as completely surrounded by such a fortification. The data now available makes it likely that the Toltec and other groups may have appeared in Yucatan by A.D. 800 and thereafter, perhaps brought in as mercenaries as so often happened later in Maya history. In whatever capacity they arrived, they appear to have established themselves at Chichen by A.D. 950 as the controlling power. As has happened in history elsewhere, the mercenaries became the controlling forces. Toltec raids, battles, and sieges, combined with the internal weaknesses of Classic

Maya culture and perhaps with changing environmental factors, brought about a swift collapse in the Puuc.

The aftermath of the collapse was also devastating. Most of the southern Maya Lowlands have not been repopulated until the last fifty years. Eleven hundred years of abandonment have rejuvenated the soils, the forests, and their resources. Modern people are now making inroads into them. Kekchi Maya Indians have been migrating into the lowlands from the north Guatemalan highlands as pioneer farmers for the past century. The Mexican government has colonized the Yucatan, Campeche, and Quintana Roo area with dissatisfied agriculturists from overpopulated highland areas. The forests are being logged and cut down. Agricultural colonies have failed in both Guatemala and Mexico, and some zones are already abandoned. In other areas the inhabitants have turned to marijuana cultivation. Vast areas have been reduced to low scrub jungle, and large amounts of land are now being converted to intensive agriculture. One looks at the modern scene and wonders. Fortunately, there is a movement afoot to set aside the remnants of the once immense monsoon forests, and a series of protected zones in the form of contiguous national parks are now in existence in Guatemala, Mexico, and Belize. Unfortunately, looters, illegal loggers, and farmers continue to make inroads into both the natural and the cultural patrimonies of the area.

The Legendary and Historical Toltec

Itzcoatl, the fourth Aztec emperor (1427–40), did no one any favors, least of all when he ordered a purge of the state archives and the burning of all of the most ancient history books. In that particular act of anti-intellectualism the documents perished that could have unscrambled the history of the Toltec. As it is, Toltec traditions and history are a mass of contradictions, conflicting dates and king lists, overlapping and telescoped events, and plainly fraudulent rewriting on the part of the Aztec to support their claim that they were descended from the Toltec. Fortunately, Wigberto Jiménez-Moreno (for example, 1941) and other distinguished scholars have been able to make sense out of the major features of Toltec history and to inject a good deal of convincing documentary detail into the archaeological record.

There are two major lists of Toltec rulers. One is derived from Ixtlil-xochitl's *Historia Tolteca-Chichimeca* (*Obras historicas*, 1952), which is an account of the origins and history of Texcoco written by an educated Texcocan after the Spanish Conquest. The other source is the *Anales de Cuauhtitlan* (1945), a generalized history of a Valley of Mexico city-state whose inhabitants claimed that their ancestors had come from Tula; its author is unknown. The two lists are different but overlap. G. C. Vaillant and others (1962; Sanders 1965, 182) believe that the two lists are of

Table 7-1. Two Lists of Toltec Rulers from Ethnohistoric Sources

Ixtilxochitl List		Anales de Cuauhtitlan	
Huemac, migrant priest leader			
Chalchiuhtlanetzin	A.D. 510-62 (52)		
Ixtlilcuechahauac	562-614 (52)		
Huetzin	614-66 (52)		
Totepeuh	666-718 (52)		
Nacoxoc	718-70 (52)		
Mitl Tlacominhua	770-829 (52)		
		Mixcoamatatzin	
Xihuiquenitzin (Queen)	829-33 (4)	migrant military leader	(?-?)
		Huetzin	869-? (?)
Iztaccaltzin	833-85 (52)	Totepeuh	?-887 (?)
		Ihuitimal	887-923 (36)
Topiltzin (Quetzalcoatl)	885-959 (74)	Topiltzin (Quetzalcoatl)	923-47 (24)
		Matlaxochitl	947-83 (36)
		Nauhyotzin I	983-97 (14)
		Matlaccoatzin	997-1025 (28)
		Tlilcoatzin	1025-46 (21)
		Huemac	1047-1122 (75)

SOURCE: Sanders, 1965. Adapted from G. C. Vaillant, *The Aztecs of Mexico*, rev. by S. B. Vaillant. Copyright 1941, 1962, by Doubleday & Company, Inc. Reprinted by permission of Doubleday & Company, Inc.

different dynasties but that they overlap with Topiltzin-Quetzalcoatl, who is named in both. Table 7-1 summarizes the lists and their correlation as presented in Sanders (1965, 182). Numbers in parentheses are the lengths of reign.

Of the nine dated reigns from the Ixtlilxochitl list, six are of fifty-two years each. This corresponds to a complete cycle of the sacred almanac and inspires less than complete confidence in the accuracy or even the truth of the list. In fact, judging by the archaeological record, this list is almost wholly legendary, perhaps built up after the Toltec rulers came to power and intended to lend them more legitimacy through a longer history. The alternative to this possibility of official fiction is that somewhere outside of the immediate environs of Tula, there are sites that belong to the early Toltec kings.

The very irregularity of the reigns and their lesser lengths in the *Anales de Cuauhtitlan* list lend somewhat more credibility to it. Huemac, an extraordinarily important figure as the last Toltec ruler, had a reign of seventy-five years, somewhat suspect by its length. One might also notice the conflict in the length of reign assigned to Topiltzin in each list: fifty years' difference.



Fig. 7-4. The remains of a frontier fortress at La Quemada, Durango, Mexico, on the trade routes north to the Indian cultures of the U.S. Southwest. Trade lapsed at various times, finally leading to the abandonment of these way-station cities. (Courtesy Margaret N. Bond and Franklin C. Graham)

By checking one document against another and the historical information against the archaeological material, Jiménez-Moreno has developed a framework for Toltec history and prehistory (1941, 1966b). There are other reconstructions, notably that of Paul Kirchhoff (1964). Jiménez-Moreno's synthesis is now both modified and partly confirmed by the considerable archaeological work in and around Tula during the past thirty years (Mastache et al. 2002).

During the period of Teotihuacan's dominance, peoples of Mesoamerican culture from in or around the Valley of Mexico colonized to the north, penetrating even into Durango and Zacatecas. Jiménez-Moreno suggests that the great fortress of La Quemada (fig. 7-4) may be the Tuitan of the chronicles. This expansion took place during the period of A.D. 100 to 300, colonial centers thus established lasting until around A.D. 600, when many of them were abandoned. The expansion was in many cases connected with extensive mining activities.

The first major period of Toltec history began when, after the fall of Teotihuacan, people from the northern colonies flowed back south into the central mesa zone. Barbarian groups from the northern deserts also moved

south. Jiménez-Moreno would see the Toltec as a Mesoamerican group led to the Valley of Mexico by their legendary leader, Mixcoatl (Cloud Snake), who established their capital at Ixtapalapa.

The second and greatest period began when, pressured by the historic Olmec who controlled Cholula, the Toltec moved to Tula and placed their capital there. Tula was already a town, having been established in the period of Teotihuacan dominance, possibly as a colony of the main city. Tula is the most frequently mentioned Tollan of the chronicles, although there are other places that were also called Tollan. The Toltec move was made under the leadership of Topiltzin, also known as Quetzalcoatl. He was also called Ce Acatl, or “1 Reed,” after his birthday. This move was probably made about A.D. 960 according to the chronicles (Carrasco 1971b).

During this period Topiltzin, the high priest of the Quetzalcoatl cult, became involved in a power struggle with another religious and political faction. In the chronicles a series of events is mentioned in which Quetzalcoatl and Tezcatlipoca are pitted against one another. Quetzalcoatl is defeated by treachery and is exiled. Jiménez-Moreno (1941) argues persuasively that this is historical truth—that Quetzalcoatl was actually the high priest of a religious cult and that his faction was defeated and sent into exile. According to the legends, Quetzalcoatl abhorred human and blood sacrifices and urged that flowers, fruits, and some animals be offered to the god he represented. The Toltec-Chichimec followers of Tezcatlipoca, the lord of darkness, wished to promote human sacrifice and all of the bloody terror that went with it. Sanders (1965) suggests that the faction of Tezcatlipoca represents newcomers from the barbarian north. Walter Krickeberg (1956, 209) has compared Topiltzin-Quetzalcoatl with the Egyptian heretic king Aknahton. Like Aknahton, who also sought to reform a dominant state religion, Quetzalcoatl seems to have had a relatively ephemeral effect. In any case Topiltzin-Quetzalcoatl, with his followers, the Nonoalco, moved off the Toltec stage at about A.D. 987, reportedly going to Cholula and then to Yucatan. The great period of Tula continued, and Aztec chronicles speak with unvarnished admiration of these Toltec.

Sahagún’s informants said, “The Toltecs were wise. Their works were all good, all perfect, all wonderful, all marvelous; their houses, tiled in mosaics, smoothed, very marvelous” (1961, 10:165–66). The Toltec were righteous, not deceivers. Food, especially maize, was produced in abundance. “They were tall; they were larger [than the people today]. Because they were tall, they ran much and so were named [the tireless runners]” (1961, 10:169). It is also claimed that they spoke Nahuatl.

Kirchhoff (1961) has attempted to define the extent of the Toltec empire using chronicle material. It is clear that the main focus of the empire was north and west of the Valley of Mexico, with main centers at Tula, Tollanzinco, and Tenanco, including parts of the Bajío of Jalisco. Thus, most of

the Valley of Mexico and all of the Valley of Puebla were excluded. The two valleys were controlled by the historic Olmec Uixtotin, who apparently ruled with an iron hand from Cholula. The chronicles speak of an "Olmec tyranny."

Tula dominated this large political unit until about A.D. 1156, when it was overthrown. The third and last period of Toltec history began when Huemac, the last Toltec king, transferred the capital south to Chapultepec, where he died in about A.D. 1162. This is the end of an independent Toltec dynasty, and by this time new waves of barbarians were again breaking through the northern frontiers and penetrating even into the Valley of Mexico. The breakup of the Toltec empire meant that again Mesoamerican refugee groups and newer, rawer barbarians began a series of intrusions against the cities of the central zone.

*The Archaeological Record at Tula:
Environment, Chronology, and Physical Layout*

Very little direct information about the Toltec pertains to the first period of their history. The second period is reasonably well documented by Jorge Acosta's work at the main acropolis of the civic center (1956, 1964b, 1974). Thirteen seasons' work in the civic architecture has given us a basic sequence upon which to build. This was supplemented by Moctezuma Matos's excavations and area surveys (1974) and by R. A. Diehl's excavations in residential structures (1974, 1983). A. G. Mastache, Robert Cobean, and Dan Healan (2002) have greatly clarified matters, both through further work and through a judicious synthesis of previous investigations.

Tula is located about 65 kilometers (40 miles) northwest of Teotihuacan and is laid out along one major ridge with groups on adjacent spurs. The Tula River, which is a tributary of the Rio Panuco, flows north past the ridge, giving easy access to water. It also forms a route of communication to the Veracruz coast. Generally rolling countryside broken by sharp ridges characterizes the zone inhabited by the Toltec. To the east lies the ancient Teotlalpan or "Land of the Gods," and still further to the east and north was Huastec country. The Teotlalpan contains the important Pachuca obsidian mines and was also an extremely important agricultural zone at one time. Both the Teotlalpan and the immediate Tula area were ravaged during the colonial period by the destructive effects of overgrazing by sheep, goats, and cattle, continuing a drastic decline in fertility begun in the fourteenth century through erosion and overcropping. What are now exhausted, eroded, deforested lands were fertile, well-watered, and extensive croplands and forests at the time of Toltec domination (S. F. Cook 1949).

Chronology. Work by Robert Cobean (1974; Mastache, Cobean, and Healan 2002) indicates that at least six ceramic phases are present (table 7-2).

Table 7–2. Ceramic Phases in the Toltec Area

Phases	Approximate Dates (all A.D.)
Pre-Prado	200–650
Prado	650–750
Corral	750–850
Terminal Corral	850–900
Early Tollan	900–1000?
Late Tollan	1000–1150
Aztec 2 and 3	1150–1425
Aztec 4	1425–1540

SOURCE: Adapted from Cobean’s chronology in Mastache et al. 2002, table 3.1. Revised to include a Pre-Prado phase.

These ceramic complexes fall into three major developmental periods. One earlier phase corresponds to a long period of contemporaneity with Teotihuacan.

Prado and Corral ceramics shows certain affinities to pottery of the Basin of Mexico, and some of it belongs to a ceramic group called Coyotlatelco.

The ceramic period Tollan has two phases (Early and Late), which correlate with major architectural periods of Tula. Pottery is characterized by orange-colored pottery decorated with multiple wavy red lines, nearly identical with the Mazapan style of the Basin of Mexico. Various monochromes and dichromes make up most of the complex, with the major forms comprising chile bowls, water jars, and simple bowls with nubbin legs. A few sherds of Late Classic Maya polychrome have been found. By far the most important imported pottery, however, is Plumbate, from the Pacific Coast of Guatemala. Plumbate, a lead-colored and glazed pottery widely traded about A.D. 1000, is found in great quantity and variety. Nicoya Polychrome from Costa Rica and Fine Orange from the Maya Gulf Coast were also imported (Diehl, Lomas, and Wynn 1974). The second reorientation of the city grid takes place ca. A.D. 1000.

The third ceramic period dates from after Tula’s fall from its status as a great power center. Black-on-orange potteries similar or identical to those from the Basin of Mexico are found over the site. Aztec 2 material is clearly from a widespread occupation, whereas Aztec 3 ceramics are limited and sporadic in distribution, indicating more of a squatter occupation. It may have been during the Aztec 3 period that the main occupation center shifted from the ridge to the modern location of Tula. The modern town probably rests on the site of the sixteenth-century community, which was sizable. Chalco-Cholula polychromes show up in this later complex, as do quantities of black-on-white pottery from the Huastec area (Huastec 6 period).

The Great City. Pre-Prado settlement patterns for the Teotihuacan periods indicate no large communities. Small Tlamimilolpa-, Xolalpan-, and Metepec-

phase house-mound groups were scattered over the countryside between Tepeji del Rio to the south and the present Endho Dam of the Tula River to the north. No significant architectural remains from this period have been found at Tula itself.

A large and only partially excavated ceremonial precinct at the center of the ridge (Tula Chico) dates to this period and apparently was built after the fall of Teotihuacan (A.D. 650). The city associated with it, the first known at the site, is on a grid oriented toward the cardinal directions and probably spread over 5 to 6 square kilometers (3.1 to 3.7 square miles).

Acosta's (1974) excavations revealed a two-stage temple structure, part of which was round. This suggests that the temple may have been dedicated to Quetzalcoatl in his guise as Ehecatl, the wind god. An attached altar carried a frieze of skulls, crossed bones, and Toltec warriors. Associated with the temple was a platform which contained the only Tula artifact that lives up to the reputation of the Toltec for fine craftsmanship. The piece is a Plumbate jar covered with mother-of-pearl carved to represent feathers. The motif is that of a coyote with its mouth open to reveal a man, apparently representing a Toltec warrior with an animal headdress. Acosta argues that this is an actual representation of Quetzalcoatl. The coyote is known to have been Quetzalcoatl's *nahual*, or animal soul, and therefore the symbolism would be appropriate.

During the Terminal Corral phase, about A.D. 850, the ceremonial buildings at Tula Chico were looted and burned and a drastic alteration of the city took place.

Early Tollan. About A.D. 900 the city was reoriented and laid out on a grid that is oriented about 17 degrees east of north, very close to that of Teotihuacan. The Early Tollan phase, about A.D. 900–1000, is associated with this expansion. Mazapan pottery shows some stylistic affinities to later "Aztec" black-and-orange wares. The city grew to cover about 13 square kilometers (over 5 square miles) by A.D. 900. Apparently, most of the urban population lived in apartment compounds very similar to those at Teotihuacan. The city was made up of streets with a dominant L-shaped pattern. In other words, the city was gridded as before, but it had rather short street lengths and no great avenues as in Teotihuacan. During this period the sacred and official buildings of the city were concentrated to the south of the earlier Tula Chico.

The main group of late civic architecture is elevated, acropolislike, on the southern end of the ridge, with artificially terraced slopes. It contains about 35 percent of the one thousand mounds at Tula. Diehl reports terrace walls 15 to 18 meters (50 to 60 feet) high on the north and west sides, and these were certainly defensible. Other, smaller civic plazas such as Tula Chico are known within the city, but the main temples, those of the sun (or White Tezcatlipoca of the East) and Quetzalcoatl, are in the

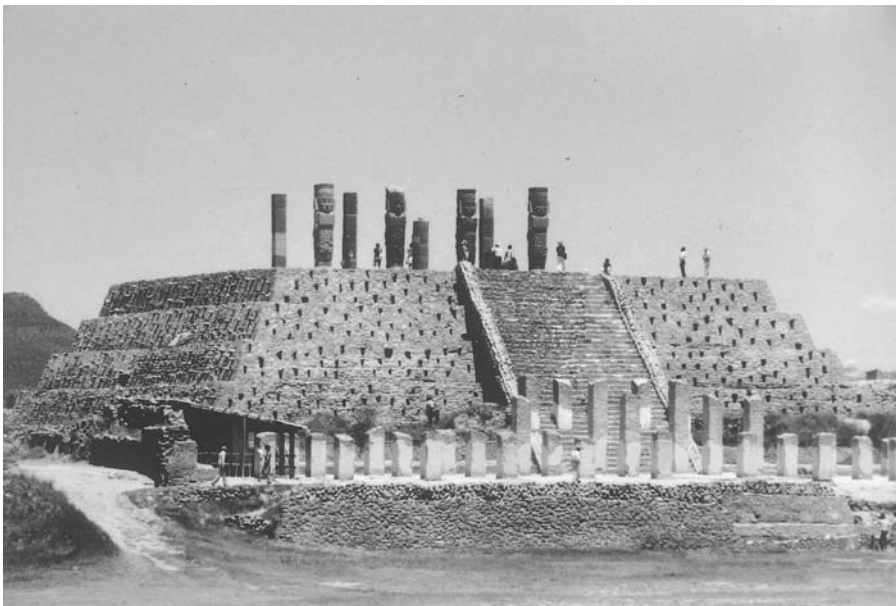


Fig. 7-5. Structure B at the capital of the Toltec, Tula, Hidalgo, Mexico. This building is evidently one that was copied by the Maya at Chichen Itza (the Temple of the Warriors).

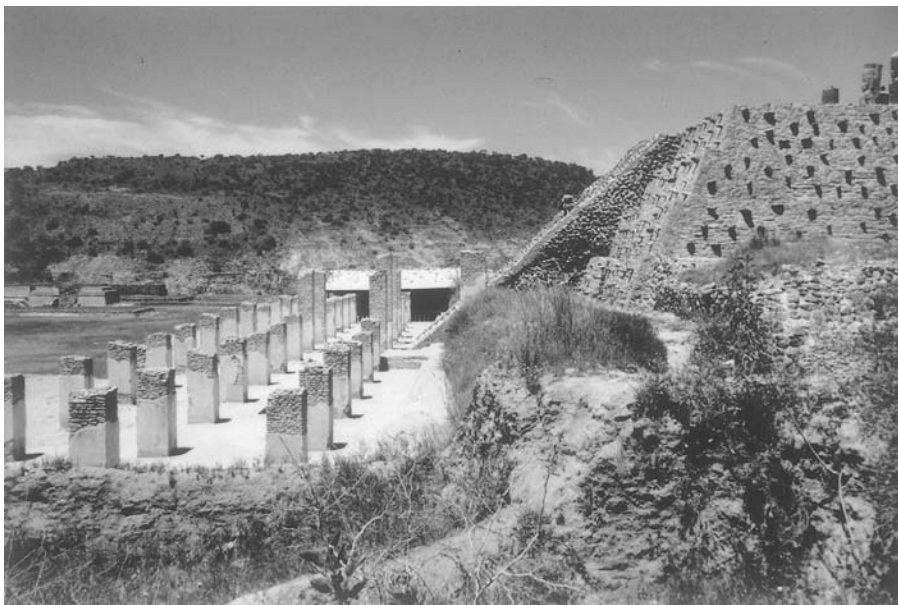


Fig. 7-6. Structure B, Tula, viewed along its colonnaded forecourt, the columns of which once supported beams and a flat roof. Projecting stones are the structural ties to the cut-stone veneer that once covered the platform.



Fig. 7-7. Structure B, Tula, with a section of original sculptured panels and stone veneer. Prowling jaguars and crouched eagles gloat over human hearts. Both the animal and the bird were symbols of the sun.

acropolis group. The group is oriented $15\frac{1}{2}$ degrees east of north, like Teotihuacan (Diehl 1981).

The focus of the southern, late, and most important civic group is Structure B, or the Temple of Quetzalcoatl in his form as the morning star (Tlahuizcalpantecuhtli). Structure B, facing south onto the square, is a squat mass of masonry built with *talud-tableero* features (figs. 7-5, 7-6). It had been enlarged and renovated at least six times. In its latest phase the whole platform was encased in sculptured panels depicting prowling, slaving jaguars and pumas (fig. 7-7), heart-devouring eagles and buzzards, and Quetzalcoatl himself. Toltec warriors and more abstract designs are also shown. The motifs of these panels were emphasized with bright greens, reds, blues, and white. Most of the paneling has been destroyed or removed since the city fell, and only a few zones remain intact.

The superstructure was entirely missing when excavated, but judging by Toltec architecture in Yucatan (Chichen Itza), there was probably a large, two-roomed temple on top of the platform. The temple was approached by a broad staircase, at the top of which were banners held by human and jaguar figures of stone. A stone *chac mool*, or reclining human figure, sat in front of the doorway. The main door was framed by the columns formed

from stiffened serpent bodies, the heads of which rested on the floor. Inside, gigantic human figures in the form of caryatid columns held up the flat roof in the front room, while square, carved columns supported it in the rear chamber. Also within was probably a large, flat stone table altar supported by small columns carved in the shape of men who raise their hands to carry the table. These are the famous Atlantean figures, so named from their posture of burden-bearing. Alternating wooden columns and adobe-brick sections made up the walls if the temple followed the general pattern of construction at Tula. Elsewhere in Tula walls were plastered and painted with bright murals, and it is likely that the major temple was decorated similarly. Perhaps Structure B shows us in somewhat diminished form what the greater temples at Teotihuacan looked like.

Altogether, the effect of the theoretical reconstruction of the Temple of Quetzalcoatl is bizarre, magnificent, and powerful to our minds. It must have been at least as impressive to the Toltec and their contemporaries, who also vested the building with the supernatural power of an important god.

The major temple on the square, Structure C, faces west and is possibly a temple to the Sun or the White Tezcatlipoca of the East. In later times the White Tezcatlipoca was sometimes a manifestation of Quetzalcoatl. So much of Structure C was destroyed at the time of the city's downfall that nothing is left but the immense platform, which was decorated with carved panels, all but a few of which were looted in ancient times. A feature reminiscent of Teotihuacan is the large subsidiary platform attached to the centerline front of the main platform. Atlantean figures were found in the debris of this building.

Mastache, Cobean, and Healan (2002) point out further resemblances to Teotihuacan: there are two major temples, and—as at Teotihuacan—the larger is oriented west and the smaller is oriented south. They suggest that in both the earlier and the later cities, the concept of duality had already set into Mesoamerican religious patterns. As will be seen, this concept of dualism is reflected among the Aztec in the presence of two temples on the summit of the Great Temple of Tenochtitlan.

An elaborate wall, called the Coatepantli (serpent wall), is curiously located to the rear (north) of the Temple of Quetzalcoatl. Set into a panel between frames of frets is a row of lively serpents, apparently devouring skeletal figures. The frets are the same as those that appear as part of the name glyph for Tula in the Mixtec codices (*Codex Bodley* 9–11, Caso 1960, 38). The wall is capped with the capital Gs or shell cross-sections that are also found on the edges of the palace roofs at Tula. The serpent wall closed off the northern zone from access to the sacred precinct. A similar wall performed the same function in Aztec Tenochtitlan.

Jammed among and against the temples were colonnades and palaces. The large main square was marked off on two sides by such colonnades.

Structure 3 is west of Temple B and is largely formed by a row of three patios within which are altars, daises, and benches all placed under arcades. Built-in plastered fire pits and huge pottery incense burners were found in the palace. Enormous masses of burned debris were found on the patio floors, giving Structure 3 the name Burnt Palace. However, it is noteworthy that, other than deliberate burials, no skeletal remains were found within the structure. Everyone evidently escaped when the palace burned down, or they had abandoned it long since.

The interior of Patio 1 was sumptuously decorated around the edge of the courtyard's roof with a carved stone frieze made up of slabs similar to those found on nearby Structure B. Reclining human figures, sacred greenstone symbols (*chalchihuites*), capital G forms, and the depiction of a blood and heart receptacle make up the major motifs. Within an altar in Patio 1 was a closed stone box that contained, among other things, a carved jade plaque—one of the few precious items recovered from the site.

Scratched into the plaster of the floor of Patio 3 of the Burnt Palace are what were probably boards for playing the popular Mesoamerican game, *patolli*. The boards vary somewhat among themselves but generally look like modern game boards with an additional cross of squares in the center. The game was played by advancing counters around the board using bone dice. One can imagine that the end patio may have been the zone where the palace guard or other permanent functionaries were stationed and that the *patolli* games were a means of whiling away the endless hours. The later Aztec gambled on the outcome of the games.

An altar or dance platform was placed in the middle of the main plaza. A cache found in its masonry consisted of thirty-three ceramic vessels, many of which were precisely like early (Aztec 2) black-on-orange pottery from Culhuacan in the Valley of Mexico. It is interesting to note that when Tula was abandoned and part of its population settled in Culhuacan, the later Aztec attempted to legitimize themselves by taking a ruler from that city. Three hollow female figurines were also found in the platform cache, and these are also greatly similar to contemporary figurines from the Valley of Mexico.

A very large ball court located on the west side of the main square is similar in its closed plan to one at Xochicalco. It is about 110 meters (361 feet) in overall length. Another ball court lies north of the Coatepantli. At least three more are known from elsewhere in the site, making a total of five at Tula.

Acosta (1964b) comments that the site of Tula and its principal buildings show meticulous and excellent planning, but that execution of those plans was careless and characterized by poor workmanship. Many or most of the features of the civic architecture and the building groups were present at Teotihuacan, but the Toltec added their own contribution in their use

and conceptualization of those elements. One innovation that took hold and lasted until the Spanish Conquest was the use of masses of columns around open courtyards. These columns, usually carved, supported roofs and sheltered stone benches. A comparison of the great market of Aztec Tenochtitlan with the central square of Tula shows great similarities in this regard. The emphasis on the ball game and the ball court as a formal structure begins in this period, and the lavish use of architectonic sculpture in place of or supplementing mural art was another change in emphasis from Teotihuacan times.

Late Tollan. The next expansion and reorientation took place about A.D. 1000, when the urban grid was relaid to conform to about 17 degrees west—a drastic change of about 34 degrees. The city now covered about 16 square kilometers (6.2 square miles).

The dominant apartment-compound pattern of residence was abandoned in favor of a more flexible “house group” unit, which consisted of several houses arranged around a courtyard, with some auxiliary buildings. There are some two thousand multifamily residences within the city. These include house groups, apartment compounds, and palaces, with the status of the residents reflected in their habitations. Present estimates for Tula’s maximum population are that it fell between thirty-two thousand and thirty-seven thousand (Diehl 1981). Another ninety thousand are estimated to have lived in the 1,000 square kilometers (386 square miles) around the city.

Diehl (1983) and his colleagues have excavated a group of fifteen houses in house groups located northeast of the Tula Chico zone in the center of the ridge. The houses are grouped into what Healan (1974) argues are corporate residential groups built for extended families. The houses are rectangular and arranged around central courtyards in each group, with restricted access. The architecture is of small stones set in mud in the lower parts of the walls and adobe block above. Beam-and-mortar roofs finished off the rooms. Food-processing areas have been located in many of the houses, and there are areas that were used for textile manufacture and maguey-fiber processing. The diet of the Toltec of Tula was probably more varied than reflected in the record; only six food plants are mentioned as having been locally cultivated (Diehl 1981). However, a multitude of small animals were hunted and eaten, with a heavy emphasis on deer and dogs. Extensive evidence of irrigated fields, where these and other products such as cotton were raised, can be seen on aerial photographs of the zone (Mastache and Cobean 1985).

A kiln that was found seems to have been used for production of the subfloor drain tubes so common throughout Tula. D. F. Healan (1989, 143) suggests that the houses are big enough and arranged in such a way as to imply that the groups accommodated about 4.5 persons per house. A temple-type structure was found in one group. Altars were found within

all courtyards, one with a burial inside it. The skull was missing, but whether this implies human sacrifice or ancestor worship is impossible to say at the moment. What is certain is that the later housing groups at Tula are quite different from the great apartment compounds at Teotihuacan. A spectacular cache of Plumbate and Nicoya Polychrome vessels was found in one house.

Sculpture and Other Art

Most of Tula's Toltec art survives in the form of sculpture. Apparently, however, all of the sculpture was originally colored and unsculpted surfaces were painted. Most of the fragments of painted walls are geometric in motif. Bands of red, blue, yellow, and black decorated the walls of a passage between Temple B and the Burnt Palace. The only life scene recovered from Tula so far is that of a sketchily drawn deer hunt, but this is from a much earlier structure that may date back to Prado times.

A hallmark of the Toltec horizon in much of Mesoamerica is the *chac mool* sculpture. These stiff and ungainly reclining human figures were probably always placed in front of temple doorways to receive preliminary offerings. Free-standing sculpture at Tula includes four stelae, long since removed from the site. These may have depicted rulers of the city (fig. 7-8). Certainly to be included in the inventory is a petroglyph on a rock of a nearby mountain that shows Quetzalcoatl and includes his calendrical name, Ce Acatl (1 Reed). Production of a great mass of small sculpture that supplemented architectonic sculpture is highly characteristic of the Tula Toltec and later Basin of Mexico cultures.

However, most Toltec sculpture was architectonic and consists of stone slabs designed to be fitted into continuous bands or friezes. Columnar sculptures make up the other major group. Many of the motifs have already been noted, but an important feature not yet mentioned is that of hieroglyphic writing. Several panels include bar-and-dot and day-sign notations: "2 Serpent Eye," for example. The distinctive features of Tula writing seem to be closely related to the system found at Xochicalco, according to Acosta (1964b), as well as to that of the murals of Cacaxtla. The glyph for *cipactli* (alligator) is often found at the top of columns.

One of the most interesting sculptural scenes at Tula is that found on a dais or throne in the antechamber of a palace between Temples B and C. Quetzalcoatl himself is depicted against the background of a feathered serpent. He faces a file of Toltec warriors, and a line of feathered serpents undulates above the whole scene. The feathered serpent again (as at Teotihuacan) is associated with rulership. This scene and sculpture and the dais are practically duplicated at the Temple of the Warriors in Toltec Chichen, Yucatan (figs. 7-9, 7-10, 7-11, 7-12). Some of the symbols that Cynthia Kirstan-Graham (1989, as cited in Mastache et al. 2002, 105) interprets



Fig. 7-8. A rather smug-looking ruler depicted in full-front position on Stela 1 at Tula. He holds a spear thrower (atlatl) in his left hand.

as names of Tula rulers or dynastic symbols are found in the sculptures both at Tula and at Chichen. A. M. Tozzer long ago (1957) noted the common occurrence of a descending bird motif in certain headdresses of Toltec warrior figures, and the motif has long been regarded as a symbol of rulership at Chichen.

Trade, Metallurgy, and Northern Expansion

Tula was said by Sahagún's informants to have been a place where a number of different peoples who spoke different languages lived. Certainly, it was large enough to be an ethnically diverse city. Comparing its size with those of better-known Mesoamerican cities, its thirty-seven thousand compares favorably with those of other capitals. As in Teotihuacan, there were craft



Fig. 7-9. A section of carved panel on the Temple of the Warriors, Chichen Itza, Yucatan, Mexico. Human figures with Tlaloc and other symbolism alternate with jaguars holding (offering?) human hearts. Note the conceptual and physical similarities to sculpture on Structure B, Tula (fig. 7-7), notwithstanding recent claims that the Chichen temple was used as a model for reconstruction of the Tula building.

specialists, many of them obsidian workers. Also as in Teotihuacan, there were ties with the rest of Mesoamerica through long-distance trade. Diehl's project (1983) detected a cache of ceramic vessels located in an apartment compound. The pottery was Plumbate and Nicoya Polychrome, both made outside Tula. Plumbate was made in the Izapa and Tajumulco areas of southern Guatemala, which also produced cacao. The rest of the pottery is Nicoya Polychrome from the Pacific Coast of Nicaragua and Costa Rica.

These long-distance trade connections are of more than ordinary interest, because they may indicate the means by which metallurgy was introduced into Mesoamerica. Metalworking in western Mexico appears at about A.D. 800 at the earliest, but it is much older in South America, dating back to at least 800 B.C. in the Andean area. It has long been thought that metallurgy was introduced to Mesoamerica from South America. There was also a long-standing tradition of metalworking in the intermediate zones of Central America, Colombia, and Ecuador. Although it is not by any means clear at this time, it may be that fairly sophisticated metallurgical techniques were learned from Central Americans and transmitted by Mesoamerican



Fig. 7-10. Maya rain-god (Chac) masks carved on corner of Temple of the Warriors, Chichen Itza. Both central Mexican (Toltec) and Maya styles are represented on this building.

traders. It may also be that long-distance voyages from South America introduced the craft through West Mexico.

The Toltec era was one in which metallurgy spread over Mesoamerica. Yet it is also frustratingly true that not a single shred of metal has been reported from Tula. Superior examples of Toltec-style metalworking are known from Yucatan, but these probably were produced by Maya craftsmen. However, these Maya had to have learned the technique from the Mexicans, inasmuch as metalworking is not present in Classic Maya culture. Thus, we can only make the most circumstantial surmises at the present: that metallurgy was probably introduced into Mesoamerica via the Pacific Coast and, ultimately, from South America through Central America, and that the Tula Toltec probably had a great deal to do with the development



Fig. 7-11. Facade, Temple of the Warriors, Chichen Itza, with stiffened feathered serpents serving as the supports for lintels (now absent) that once bridged the doorway. Again, note the mixture of sculptural styles, with long-nosed Chac masks on the wall and a chac mool in the foreground.



Fig. 7-12. The Skull Rack (tzompantli) near the Great Ball Court, Chichen Itza. The sculpted human skulls are depicted as stuck onto vertical posts. This platform presumably once supported an actual skull rack similar to that described by the Spaniards in late Aztec Tēnochtitlan.

and spread of the craft throughout Mesoamerica via their long-distance trading activities.

A line of outpost settlements of Mesoamericans was established through expansion into the frontier areas of Durango and Zacatecas during Teotihuacan times (J. C. Kelley 1971, 768). These peripheral and frontier Mesoamerican cultures are generally grouped together as the Chalchihuites culture. The earliest penetrations were made about A.D. 100, during a period of greater rainfall that encouraged agricultural expansion. There is evidence of conflict between these cultivators and the more nomadic groups of the zone, and many of the Mesoamerican sites are fortifications protecting agricultural communities or mining areas. Hematite, weathered chert, flint, and possibly jadeite and turquoise were the principal objects of mining operations. Vast areas of churned-up gravels as well as the ancient mines themselves indicate that it was an expansive and considerable operation (Weigand 1968). Withdrawal of Mesoamericans began about A.D. 600, and by A.D. 850 the Suchil and Colorado drainage areas of the Chalchihuites area had reverted to their original inhabitants, who had absorbed much Mesoamerican culture themselves.

The Toltec expanded into the northern frontier zone or Gran Chichimeca about A.D. 900, this time to both the coastal and eastern sides of the western Sierra Madre. Contact was apparently made with the southwestern cultures of what is now the United States. Metal objects were transmitted but not the craft of metalworking (Meighan 1974). Charles Di Peso thought that about A.D. 1050 Casas Grandes was converted from a small village in Chihuahua to a major Mesoamerican trading center (Di Peso 1968, 1974, 2:290–309). From this and other centers such as Zape, *pochtecas* (long-distance merchants) made trips into the Hohokam and Anasazi areas of what are now Arizona and New Mexico, trading copper bells and other items for turquoise, slaves, peyote, salt, and other commodities that the southwesterners provided. Cultural influences followed commerce, and it is believed that many traits in ethnographic southwestern religions derive from Mesoamerican influence. Murals from Awatowi in the Hopi area seem to show southwestern versions of Tlaloc. Quetzalcoatl shows up in several areas. Chaco Canyon, in far-off northwest New Mexico, shows impressive architectural parallels with Toltec building.

A more detailed examination of the debated and complex cultural history of western and northern Mexico and their role in Mesoamerican relationships with the U.S. Southwest is outside the scope of this book. Suffice it to say that several northern Mexican trading centers were built after A.D. 1050. “Each appears to have [had] its own internal history and each collapsed due to a combination of local factors and pressures, triggered in part by unrest within the Mesoamerican governments, their main consumers” (Di Peso 1968, 54). These centers, as will be seen, outlasted the Toltec and,

in some cases, the Mexican trading connections on which their existence largely depended.

Toltec Intrusion into Yucatan: The Background

Within this segment of Maya prehistory, we again enter an era in which ethnohistory and archaeology come to bear and within which they sometimes conflict. Fortunately, several excellent minds have considered the problems and produced syntheses that are more or less convincing in their major features (Ball 1974b, 1985; R. Roys 1965, 1972; J. E. S. Thompson 1966; Tozzer 1957). The scheme followed below owes much to all these scholars, but especially to J. W. Ball's attempt to reconcile all pertinent data (1974b, 1985). More recent efforts at reevaluation of the Chichen material are taken into account, as well as some of the more than twenty years of work at the site directed by Peter Schmidt (ca. 1980–2000). However, the latter investigations are as yet scantily published.

With the simultaneous collapse of Maya civilization in the intermediate and central lowlands, there were intrusions of northern Maya elite to such places as Seibal on the Pasión River. These northerners had already absorbed significant influence from Mexican Highland cultures. As early as the eighth and ninth centuries, new motifs in sculptures at centers such as Kabah show the influence of Mexican religious concepts. At Dzibilchaltun a stone platform for use as a skull rack (*tzompantli*) for sacrificial victims dates to this period. Both giant and not so large phallic stones appear at Uxmal. Censers with Tlaloc faces applied to them appear in a rain-god shrine deep within Balankanche Cave near Chichen Itza; the censers were dated by carbon 14 as having been placed there about A.D. 860 (E. W. Andrews IV 1970).

One major question has always been whether or not the northern Maya centers went under with those of the Peten or survived for a longer time. E. W. Andrews IV (1965) has argued forcefully that the Rio Bec, Chenes, and Puuc areas all survived the southern centers for a number of centuries. He seems to have been partially right. The Rio Bec sites, including the Becan fortress, appear to have weakened as major military-political centers by about A.D. 750. As was the case farther south, diminishing populations held on in the hinterlands and even in the centers for as much as another century, but the intricate social and political arrangements deteriorated and finally disappeared. The Chenes area seems to have suffered the same collapse. The Puuc area, however, is the exception to prove Andrews's argument.

At the archetypal Puuc center of Uxmal, there is a Chenes-style building that was later buried under the gigantic platform of the Governor's Palace. The latter is pure Puuc in style. This and similar physical evidence at Uxmal indicate that Puuc outlasted Chenes and Rio Bec architectural styles and therefore also survived the general disaster to the south. It also seems

likely that Puuc was a style that spread over the entire northern plains area rather than being confined to the hill zone from which it takes its name. Indeed, the center of Chichen Itza has a Puuc-phase of building. Yaxuna, to the east of Chichen, is also known to have Puuc buildings, and other sites in that same area have Puuc features.

Ball (1985) ties these events of the late eighth and early ninth centuries to the first coming of the Itza, a ruling group of Mexican derivation that settled at Chichen Itza. Various chronicles give dates around A.D. 800 for this event. It is possibly through these ruling families that Mexican ideas were introduced to Yucatan and that some of the subsequent predatory raids and intrusions to the south (Seibal) took place. The Puuc cities may also have joined in this predation. Calakmul has a set of very late Yucatec-style stelae which may reflect a takeover of the same nature as those at Seibal and at Rio Azul. Raids on other cities to the south may have followed. It is also possible, as has been seen, that a group of Toltec military mercenaries were involved in these raids.

Yucatan is an unprepossessing place for exploitation, being mainly barren rock and thin soils, and one is puzzled at first as to what would motivate such a political and military intrusion to the area. Ceramic linkages and hints from the chronicles seem to show that the Itza and their colleagues were probably Chontal from the lowland Tabasco area at the bottom of the Gulf Coast. In such a location, they traditionally were probably middlemen in trade relationships between the Maya area and Mexico and would have been familiar with the resources of the peninsula. The largest salt fields in Mesoamerica were and are located at the northeastern corner of Yucatan and as such were a prize worth risks. Another principal resource of Yucatan for an exploitative group might have been its dense population. Even Yucatan can be a very comfortable place with enough servants. Ball suggests that the "abandonment" of Chichen mentioned in the chronicles is really the departure of *some* of the Itza for Seibal, where they established themselves about A.D. 830. Ball identifies the archaeological Seibal with one of the historical Chakanputuns mentioned in the Maya chronicles.

It will be recalled that about A.D. 910, there was an invasion of Altar de Sacrificios downriver from Seibal. This invasion was probably made by another group of Chontal from the Tabasco region. Seibal and Altar de Sacrificios were both subsequently abandoned by A.D. 950. These events would correlate with the attack of one Itza group on another mentioned by the chronicles. If one accepts Ball's identification of Chakanputun as the archaeological Seibal, then its abandonment is mentioned in the chronicles.

All of the material in the above paragraph goes over events already discussed, but with the addition that historical detail is added to the historical process outlined before. This material is important because it leads to

an explanation of one of the most interesting episodes in Mesoamerican prehistory—the establishment of a Toltec center in northern Yucatan.

Relationships between the native Maya and the early intrusive Chontal-Itza seem to have been relatively harmonious. Ball notes that an early Mexican-influenced building at Chichen has a wall relief showing what is apparently a peaceable meeting between Maya and probably Chontal leaders (Tozzer 1957, 33). These amicable relationships did not last.

Toltec Intrusion into Yucatan: The Event

According to the above reconstruction, then, the superb Puuc variant of Classic Maya civilization was still thriving on the northern plain of Yucatan about A.D. 987. The chronicles mention that in this year the Itza returned and Kulkulkan (Quetzalcoatl by his Maya name) arrived. It was as a result of this intrusion and takeover that the great and magnificent Toltec center at Chichen Itza was established. A great many of the Toltec-period ruins at Chichen have been excavated, and it is to that archaeological evidence that we now turn.

Chronology and Trends. As usual in the Maya area, the chronology is in part based on a ceramic sequence and on Maya dates, thirty-four of them at Chichen. No reliable carbon 14 dates are available, although the above-mentioned Tlaloc censers found in the nearby Balankanche Cave contained twigs that have been dated. Gill's (2000) reassessment of the dates has not been widely accepted. This reevaluation would make all the Chichen periods Classic and ending on or before A.D. 1000. However, the overlap in sculpture and the possible mentions of the same Toltec rulers at both Tula and Chichen indicate contemporaneity. Further, the sculptural and symbol ties are from the Late Tollan period, which, as noted above, dates from about A.D. 1000 to 1150. Two major periods can be derived from a consideration of all the evidence. The following is a modification of Tozzer's historical reconstruction based on the chronology developed by Schmidt's recent project at Chichen and Cobos's publication of 2004.

The Early Chichen (Late Classic) period lasted from about A.D. 750 to 900, with nearly all the Maya dates falling into the short span from A.D. 869 to 889. This is the already discussed period of Puuc-related Late Classic culture. Toward its end the period brought an infiltration of influence from Mexican sources. According to Roys (1957), Chichen's name at this time may have been Uucil Abnal (Seven Bushy Places). During this period Chichen consisted of widely scattered groups of civic architecture that included the "Old Chichen" zone, with the famous round Observatory, and the Monjas Palace structure, with its elaborate annexes. These groups are connected by *sachbes*, of which nine are known. Other groups include the Temple of the Phalli and a number of other small but elegant Puuc-style residential structures.

The Late Chichen period first saw a transitional Maya-Toltec style represented by the inner Temple of Kulkulkan and the Temple of the Chac Mool under the pyramid of the Temple of the Warriors. Recent work has revealed a set of internal causeways that connected the spread-out groups, as in the Valley of Copan. There are sixty-nine of these short roads (Cobos and Winemiller 2001). Some belong to the early phase of the Late Period, but the vast majority belong to the Late Period's late phase.

The Late Chichen (Terminal Classic) period lasted from about A.D. 900 to 1050. The period of the Toltec-Maya, it was the phase of construction of the most magnificent of Chichen's buildings. Tohil Plumbate and Silho Fine Orange potteries were introduced at this time through trade. The site had grown to cover at least 30 square kilometers (18.6 square miles; Cobos and Winemiller 2001).

Location. A functional description of the Toltec center must take account of the natural water sources that attracted settlement in the first place. There are many *cenotes* (sinkholes) in the Chichen vicinity, most of which are now choked with naturally fallen debris. In ancient times, however, many of these may have been open and furnished water. If so, then Chichen was indeed a favored spot, with a much more secure water supply than most of the northern plains, and it might have been looked on as specially favored by the rain god. Two large *cenotes* were the foci for major architecture. One *cenote* (the Xtoloc, or iguana) was the main water source. The other, larger, and almost sheer-sided sinkhole was apparently used exclusively as the focus of a rain-god (*chac*) cult. According to Diego de Landa, the first Spanish bishop of Yucatan, "Into this well they have had, and then had, the custom of throwing men alive as a sacrifice to the gods, in times of drought, and they believed that they did not die though they never saw them again. They also threw into it a great many other things, like precious stones and things which they prized" (1941, 179–81). Indeed, dredging the well has produced an immense amount of valuable material as well as human bones. Legend has embroidered fact by stating that the sacrificial victims were beautiful young virgins. A. E. Hooton, who analyzed the bones, acerbically observed that it was difficult to tell from them if their owner had been either beautiful or virgin. What he did find, however, was that most of the victims (twenty-one) were children or adolescents, with a sprinkling of adults (maybe fifteen; Hooton 1940).

Much of the valuable material found in the well, especially dozens of extraordinary pieces of carved jade, is Late Classic in date (Proskouriakoff 1974). A considerable amount had been imported from other parts of the Maya area or from outside of it, including Cocol gold work from Panama (Lothrop 1952). It therefore seems likely that the Toltec simply took over an established center of religious pilgrimage that drew people from much of eastern Mesoamerica. This would partially explain the location chosen



Fig. 7-13. The Sacred Well (Cenote) at Chichen Itza, a center of pilgrimage for Mesoamericans because of the belief that it was the home of the rain god. It is 20 meters (70 feet) to the water and 20 meters more to the bottom. Valuable objects anciently thrown in as offerings have been recovered from it.

by the Toltec for their colonial capital. Finally, Chichen is geographically located in the center of the northern plains and is well situated for military and political control of that area.

Architecture. The major Maya Toltec structures are built on a vast platform (the Great Terrace), in the middle of which is set the most important temple, that of Kulkulkan-Quetzalcoatl. This structure is more or less in line with a *sacbe* leading out of the civic precinct and north some 300 meters (984 feet) to the sacred well (fig. 7-13). Another *sacbe* leads south to another large plaza with a bulky temple in its center, the so-called High Priest's Grave. "Dance platforms" and a *tzompantli* (fig. 7-14) are scattered around the Kulkulkan plaza. The northwest corner of the precinct is occupied by a monumental ball court, the largest in Mesoamerica (fig. 7-15). It measures about 150 meters (492 feet) long and is magnificently adorned by small temples and ornamented by sculpture. The eastern side of the Kulkulkan plaza is occupied by a row of three temples, one of which, the Temple of the Warriors, is much larger than the others. A very large colonnade closes off the rest of the eastern plaza. Behind this colonnade is the



Fig. 7-14. The Temple of Kulkulkan (Quetzalcoatl) at Chichen Itza is the largest Toltec-period structure at the city. A causeway leads from this temple to the Sacred Cenote.

Group of the Thousand Columns, a subsidiary plaza surrounded by large structures built nearly at ground level something like the palaces at Tula. Another large ball court lies to the east of this group, with a jumble of structures around it which includes a sweat bath.

If Tula suffered from shoddy workmanship, such is not the case at Chichen. This colonial capital of the Toltec is magnificent in both conception and realization. No doubt the availability of Maya masons who were used to producing the superbly cut and fitted stone of Puuc structures made a difference. The stonework there is excellent. Toltec Chichen is clearly central Mexican in plan and many features, but Maya building practices of long standing are also apparent. In short, the architecture is a blend of two strong and distinctive cultural traditions.

The introduction and use of multiple columns for roof support allowed vastly greater spaces to be enclosed within buildings. The Maya arch was combined with the use of columns. Although the Temple of Kukulkan (the Castillo) is somewhat Maya in plan, with an inner sanctuary, most other buildings consist either of one large room or of two rooms, one behind the other. As at Tula, long and spacious roofed colonnades furnished with benches afforded vast cool areas for large numbers of people. The

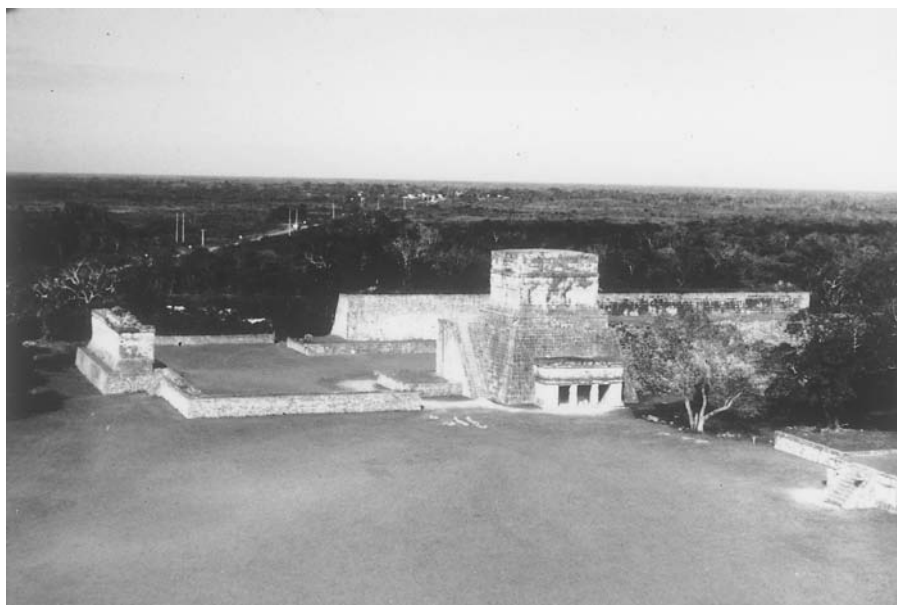


Fig. 7-15. The Great Ball Court at Chichen Itza, the largest ball-game court in Mesoamerica. Several of the small temples associated with the court have intensely interesting sculpture. One shows an assault on a walled city with siege towers. This and other scenes are perhaps from the conquest of Yucatan by the Toltec.

great numbers of columns were decorated with stiff Toltec warriors and priests, invariably framed between the sun god above and Quetzalcoatl below, on all four sides. Also, as at Tula, one major temple, the Temple of the Warriors, was decorated with bas-reliefs set in panels around the terraces of its platform. These panels depict the heart-devouring eagles and jaguars also to be found on the “dance platforms.” Stiffened, feathered serpents frame the temple doorways, and *chac mool* figures rest outside the doors, waiting for offerings. Banner holders carved in human form have been found. Atlantean figures hold up large table altars in several temples. By analogy with later and similar central Mexican buildings, there are buildings in the eastern group suitable for use as palaces, barracks, and a marketplace.

The so-called High Priest’s Grave is a somewhat smaller version of the Temple of Kukulcan. Feathered-serpent doorway columns and all of the other Maya-Toltec features are to be found on it. E. H. Thompson lifted the stone floor and found a stone shaft penetrating the platform, with several burials on several levels within the shaft. Ultimately Thompson found that he was on bedrock. A stone cover concealed the entrance to a natural cavern that had been used for the burial of an important person. Years later,

J. E. S. Thompson analyzed the burial furnishings and concluded that the person buried there was probably a member of the ruling class at the time of Toltec or Itza domination (E. H. Thompson 1938). Functionally, then, at least one of the major temples at Chichen was a funerary temple.

Architectonic sculpture is a strong feature. Bas-relief covers large areas in several monumental structures. In the great ball court, scenes of sacrifice accompany the ball-game scenes, indicating that it did not pay to have a losing team. Bas-relief human skulls decorate the platform, which supported a wooden framework with real skulls. Scenes of conquest decorate the walls of some buildings—the Temple of the Tigers, for example. The Toltec memorialized their conquests in some superb mural art found in the Temple of the Warriors and other places. An infinity of detail makes it clear that Tula and central Mexico are the sources of derivation of the new ideas. Roof frets occur in the form of the Toltec glyph for war, for example. On the other hand, the Maya rain god, Chac, decorates panels and corners of the Temple of the Warriors. Toltec Chichen was truly the seat of a hybrid culture.

Art. Sculpture, murals, and small portable objects make up most of known Toltec-Maya art. As seen above, the style is a synthesis of two distinctive traditions. The subject matter is also definitely weighted toward the martial and toward ritual violence. The hundreds of columns in the buildings and colonnades are carved with hundreds of warriors and priests, each distinctive and unique. Could these be portraits of the individual invaders? There are over nine hundred known human figures carved on the walls and columns. Gods depicted or impersonated emphasize Quetzalcoatl-Kukulkan along with his old antagonist, Tezcatlipoca, and Tlachitonatiuh, the sun god. Scenes of battle are found in murals, in sculpture, and on the repoussé-decorated gold disks from the well of sacrifice. Toltec and Maya warriors are quite distinctive, with the Maya usually wearing individualized feathered headdresses and carrying flexible shields and feathered back frames. The basic Toltec hat is a cylinder set with feathers and sometimes with ear flaps. Round shields, loincloths, and sandals rounded out the basic Toltec uniform. Battle scenes show raids on seacoast villages, combat within villages, and fighting on lakes and along the shoreline. The gold disks are the most explicit in showing the Toltec as conquerors throwing spears at fleeing Maya, interrogating prisoners, sacrificing a human, pursuing in canoes Maya who are escaping on rafts, and other variations of those themes. Sky deities, including the feathered serpent, attend the battle scenes. Disks L and M from the Cenote of Sacrifice show Tula-Toltec eagles attacking the Maya. A carved and painted dais shows lines of warriors who face each other in the center. It is noteworthy that each of these figures is backed with a feathered serpent. At Tula the strikingly similar dais has only one person with a feathered serpent behind him, leading to his identification as Quetzalcoatl. At Chichen, all are protected by the feathered serpent.

Much of the mural art is lively, informative, and interesting. Fragments from the excavation of the Temple of the Warriors show a jaguar crouched on a masonry pyramid, cactus and other plants in bloom, gorgeously clad elite-class people, tantalizing scenes of combat, a humble man offering burning incense in a bowl at the foot of a pyramid, birds and bees, and much else. A magnificent scene reconstructed by Ann Morris (1931) shows a peaceful seacoast village with people at their daily tasks. Porters carry burdens, a woman attends a boiling pot, three canoes loaded with warriors cruise just offshore through waters filled with fish, stingrays, snails, and other shellfish. The local elite discuss matters in a building over which the feathered serpent writhes. Grimmer subjects are depicted in the north temple of the great ball court. In scenes fraught with symbolism, prisoners are interrogated, houses and a temple burn, a sleeping person's throat is cut, and two Toltec figures perform an act of phallic worship. Some small-scale Faberge-quality turquoise mosaics tend to confirm the legendary reputation of the Toltec as craftsmen. These mosaics depict the feathered serpent and were used as dedication offerings in temples.

Social and Political Implications

The chronicles say that the Itza (and by inference, their Toltec colleagues) ruled at Chichen for about two hundred years. Ralph Roys (1966) believes that they dominated nearly all of the peninsula. At some point during this period, probably fairly early, the last variant of Classic Maya culture, the Puuc, was extinguished. Very little is known of this delayed part of the Maya collapse, but it may have been that the new order at Chichen, with its superior military organization, was too much competition. It is a fact that no Plumbate or Silho Fine Orange potteries, hallmarks of the Toltec period, have been found at Puuc sites, and therefore those sites must have been off the trade routes and then soon disappeared. At present we know practically nothing else about the Puuc collapse, although it would not be surprising if its general nature were the same interrelated downward spiral of decreasing populations, disrupted agricultural systems, health problems, social disorder, and military activity.

Trade Patterns and the Itza Port of Cerritos

Explorations of the artificial port of Cerritos on the northeast coast of Yucatan have given a good deal more information on the nature of Toltec-Itza control (A. P. Andrews et al. 1988). The island is small, barely 200 meters (660 feet) in diameter, but is largely artificial. It possesses port facilities in the form of a breakwater, still visible, with at least two piers. A large number of platforms (twenty-nine) were mapped, most of which may have supported perishable warehouses. The port was apparently constructed in the local Terminal Classic period (A.D. 750–900) and enlarged

during the Early Postclassic (A.D. 900–1200). A. P. Andrews and his colleagues think that during the latter period Cerritos became the principal port for Chichen Itza, 90 kilometers (almost 56 miles) distant. Most of the obsidian tools found on the island came from central Mexican sources controlled by Tula. S. Kepecs, G. Feinman, and S. Boucher (1994) note that there is a chain of Itza (C Period) sites between Chichen and the port. A major portion of the salt trade was possibly controlled through this port.

The Perspective of the World-Systems Approach

Kepecs, Feinman, and Boucher (1994) have applied I. Wallerstein's (1979) world-systems model to the Chichen problem. Their analysis of the archaeological data, including surveys they have done, are interpreted using the model. They argue that the desire for prestigious goods, salt and cotton in this case, drove the Tula elites to establish linkages with Chichen. This led to an exchange for gold, jade, turquoise, and green obsidian, mainly from central Mexico. It also led to the political reorganization of the Chichen area from one split up among seven small states to a centralized and hierarchical one with the capital at Chichen. The interlinked elites of the two cities then exchanged surpluses (interpenetrating accumulations). This was accompanied by "systemic merging of political economies over distance" (Kepecs et al. 1994, 153). While this is a good presentation format, in my opinion it adds very little to the vital explanation process, which is better served by more traditional means of historical analogy and ethno-historical complements.

The End at Chichen Itza

The later Maya had scant respect for the intruding Itza, magnificent as the Chichen capital may have been. The Itza were considered to have introduced lewdness (phallic worship?), promiscuity, incest, and other perversions to Yucatan. They were also said to have spoken Maya brokenly, which would fit the Chontal, who spoke a distinct dialect of Maya.

The chronicles give us a puzzling account of the end of Chichen Itza. Apparently, the ruler of Chichen stole the bride of the ruler of Izamal. Hunac Ceel, head of Mayapan, who was an ally of Izamal, avenged the abduction and led the sack of Chichen Itza. The Itza abandoned their capital and journeyed south to Lake Peten, their historical location. Apparently, this all occurred about A.D. 1187. It is probably not coincidental that Tula had fallen shortly before this date (ca. A.D. 1147). The Chichen center had been set adrift without the Mexican support it had once enjoyed. Hunac Ceel then turned on Izamal, defeated it, and at Mayapan rapidly put together the urban center and small conquest-state that lasted until A.D. 1446 (R. Roys 1966).

In terms of broad historical perspective, it is certain that any ruling class remaining two hundred years in the midst of an alien people must have become highly acculturated. The Chontal were Maya speakers to begin with and by the end of Chichen's domination must have handled Yucatec well. Altogether, Chichen's fall is more to be explained by external competitive politics and the internal stresses of a weakening dynasty than by any grand cultural-historical theory. As will be seen, Mayapan represents a renaissance of the native Maya tradition, although in a transmuted form.

The Collapse at Tula

Huemac's departure with his followers for Chapultepec about A.D. 1156 signals the end of Tula as a capital. Actually, the center had probably been hard pressed for some time. There is evidence from the U.S. Southwest that a series of droughts affecting the whole Gran Chichimeca began about the middle of the twelfth century. The northern frontier areas of Mesoamerica were so marginal in rainfall that minor precipitation shifts would have had major effects. It seems likely that colonial and frontier Mesoamerican settlements were abandoned and that the populations began flowing back to the south, creating pressures on the cities there. As will be seen, the invading groups were all called Chichimecs, but there were varieties of them. Some were the frontier Mesoamericans and others were acculturated peoples from the northern deserts and mountains. Still others drifted south who were genuine unacculturated barbarians from the Gran Chichimeca. The Toltec chronicles mention dissensions and conflict among factions within Tula as well as external wars. In any event Tula was abandoned after being savagely destroyed. As in the case of Teotihuacan, the destruction has the marks of an inside job. Huge trenches were put through the major temples, perhaps in search of tombs and their valuables but also clearly for the purpose of extirpating Toltec symbols. The giant caryatid columns of Quetzalcoatl's temple were thrown down and battered. The sun god's temple (Building C) was so thoroughly trenched that it was exceedingly difficult to make much architectural sense out of it later. Adjacent palaces were burned; hence the name for Structure 3, the Burnt Palace. No extensive excavations have been done in other parts of Tula, and so it is unknown whether or not they were burned out along with the civic buildings.

After the destruction of Tula, various Tula-Toltec groups joined the general drift south into the Basin of Mexico, where they settled in several communities.

A kind of golden haze fell over the Toltec in after years, and great prestige accrued to those who could claim descent from them. A diaspora of people from the broken Toltec state throughout Mesoamerica seems to have taken place. The noble houses of several regions, including the Valley

of Mexico and the highlands of Guatemala, traced their ancestry back to the illustrious Tollan.

More than social prestige was involved, however. For the Aztec, the age of Tollan represented a lost golden time that filled them with nostalgia, in somewhat the same way that the era before World War I is regarded in our own day: “And they were also very rich—of no value were food and all sustenance. . . . And these Toltecs enjoyed great wealth. They were rich; never were they poor. Nothing did they lack in their homes. Never was there want. And the small ears of maize were of no use to them. They only [burned them to] heat the sweatbaths” (Sahagún, *Florentine Codex*, 3:14).

CHAPTER 8

THE MIXTEC, TOTONAC, MAYA, TARASCANS, AND OTHERS

Before the Spaniards had conquered that country [Yucatan], the natives lived together in towns in a very civilized fashion. They kept the land well cleared and free from weeds, and planted very good trees.

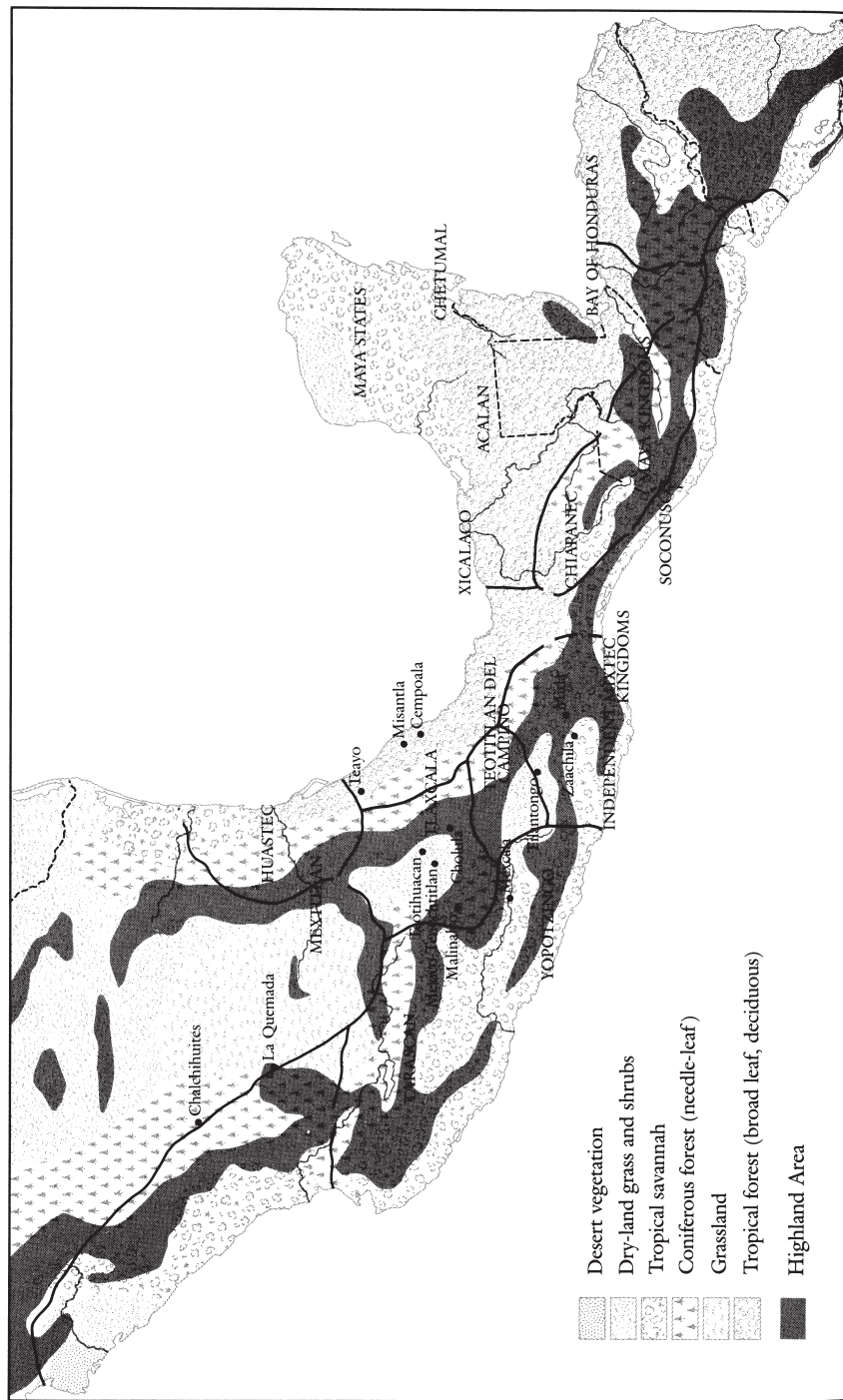
Landa 1941, 62

The first [ruin] that attracted my attention was a massy pile of building apparently designed for the defense of some interior structure. . . . It stands on the projecting angle of rock surrounded by vast precipices, [and protected by] innumerable serpents, fostered by a climate so intensely hot as that of the lower Misteca.

Dupaix in Gorenstein 1973, 18

BY THE THIRTEENTH century, civilization within Mesoamerica had a history of some twenty-six hundred years. It had assumed certain patterns of ebb and flow, rise and fall, and reformulation, resembling in some ways the ancient Middle East in pre-Islamic times. A. L. Kroeber (1963, 761–825) has pointed out the cyclical nature of patterns and cultural reformulations that occurred in the late prehistoric period of Middle Eastern civilization. That this was the case in Mesoamerica, and that it was somewhat recognized by Mesoamericans, is hinted at by the myths of cyclical creations, the endless cycles of time, and the belief among some of them that history literally repeated itself in accordance with the calendrical rounds. This was the “insider” view of what was happening. In the short run, the cyclical manner of viewing things does explain some events. Our “outsider” view, however, shows us a different reality, at least over the longer perspectives of time given us by archaeology. We will now resume the stories of various parts of Mesoamerica, bringing them down to the terrible event of the Spanish Conquest, which truncated all of their culture histories, cycles or not.

This chapter covers the final three to four hundred years before European contact. In some areas such as western Mexico, we will cover more time, but topically the focus is the same: the development of the formal and



Map 8-1. Protohistoric Mesoamerica, showing the approximate placement of the historic period (Late Postclassic) native civilizations at the time of the arrival of the Spaniards in 1519. Sites mentioned in the text are shown.

dynamic qualities of the civilizations encountered by the Spaniards (maps 8-1, 8-2). The Aztec are excepted from this consideration and given a chapter to themselves.

The Maya Lowlands

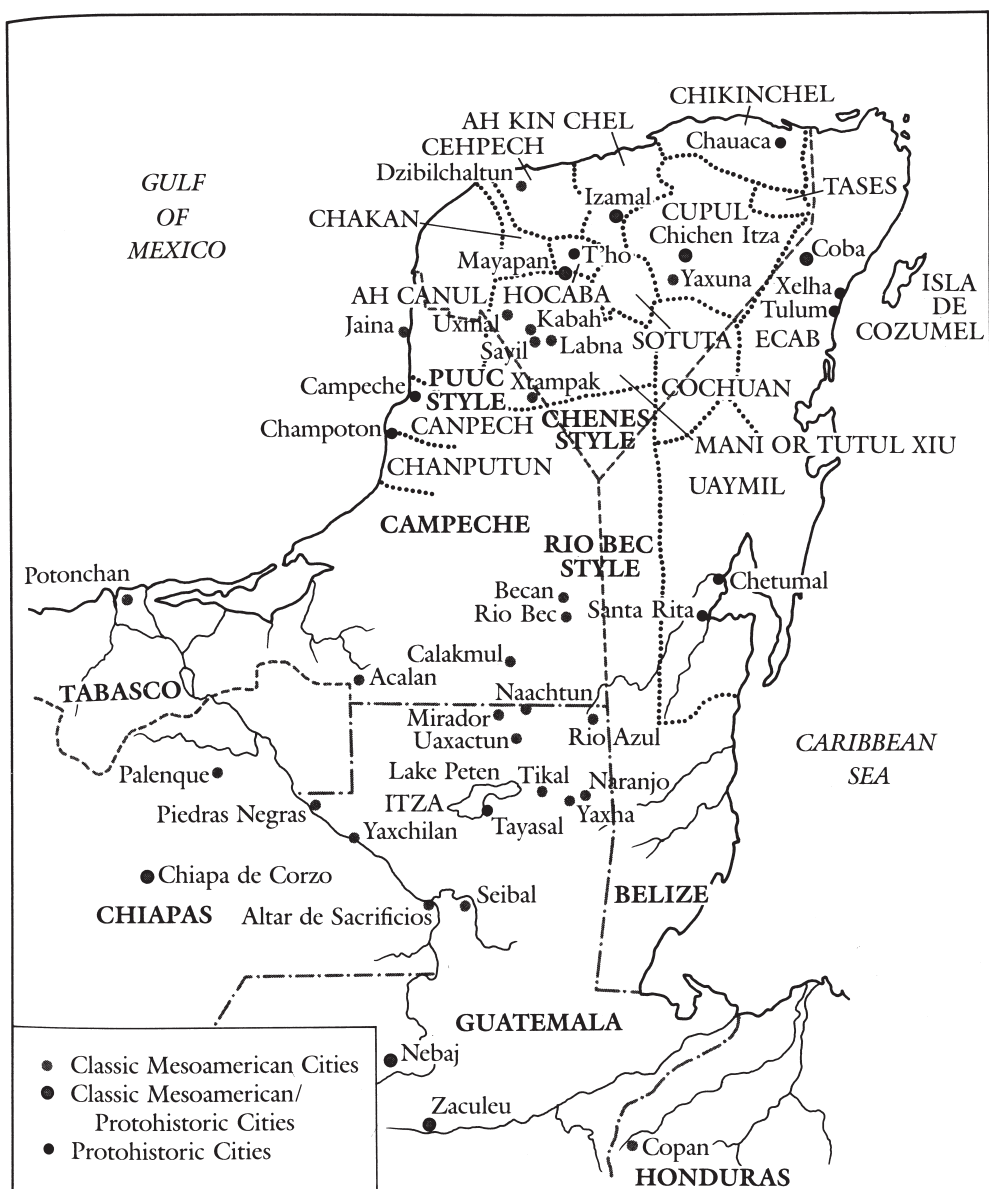
At some point about A.D. 1200, the Toltec episode came to an end in a manner not at all well understood. It seems likely that intermarriage and long residence over several generations had assimilated the Toltec rulers into the Maya mainstream. It may also be that the lapse of contact with the Toltec cities of central Mexico made the colonial capital at Chichen vulnerable in the always fierce competition among Maya political units. In any case Chichen and its Mexicanized elite, the Itza, lost their primacy.

E. W. Andrews IV (1965) has suggested that the east coast of Yucatan, with its isolated location, preserved the more strictly Maya traditions and that after the Toltec colony's fall, these influences flowed back into the northern plains area. The reestablishment of this more native tradition took most vigorous form at Mayapan. As noted before, Hunac Ceel, having overthrown Chichen and Izamal, made the previously insignificant center of Mayapan the capital of a unified Maya state.

The Mayapan Period

Diego de Landa wrote, "In that guardiania [Mani], near a mission-town called Telchac, a very populous city once existed called Mayapan in which (as if it were a court) all the caciques and lords of the province of Maya resided and there they came with their tribute" (Landa in R. Roys 1962). A substantial body of historical information survives about Mayapan and has been sifted and organized by Ralph Roys (1962). Prophecies for the twenty-year *katun* periods contain historical material in accordance with the Maya penchant for mixing prophecy with reality. The *Relaciones de Yucatan*, written in the sixteenth century, are replete with data. The Hunac Ceel episode is related in these sources as an explanation of the intrigue by which that ruler, as the head of the Cocom family, gained ascendancy over the rest of the Maya ruling lineages. A unified government was established, with the local rulers required to reside at Mayapan in order to guarantee political order and control (fig. 8-1).

Diego de Landa, in his *Relación de las cosas de Yucatán* (1941), says that Quetzalcoatl himself (Kulkulkan) was the founder of the city and that he ordained the political arrangements. It is true that the principal temple at Mayapan is dedicated to Quetzalcoatl-Kulkulkan. However, it seems likely that the god was the patron deity of the ruling family and unlikely that the actual historical personage of the Quetzalcoatl myth was involved. Myths of Quetzalcoatl's doings are too far-flung, demand too much accomplishment, and take up too much time for any single historical individual to



Map 8-2. The Maya Lowlands in the sixteenth century, showing the various regional states and major centers. This map is based mainly on Ralph Roys's study of the sixteenth-century Maya.

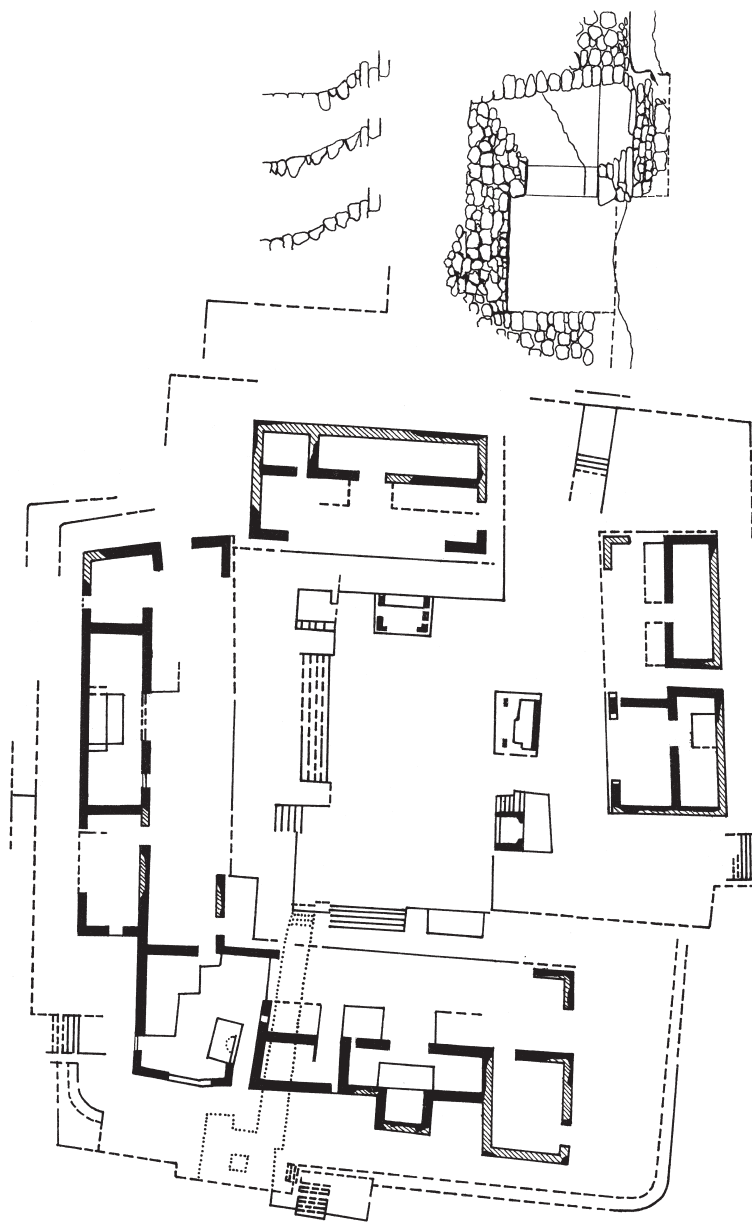


Fig. 8-1. The fifteenth-century capital of a unified Maya state, Mayapan is packed with the remains of palaces such as this one that were residences of hostage regional rulers. Complexes include apartments, shrines, and family crypts.

have been responsible for. According to accounts, all was well ordered and harmonious at Mayapan for a while. Lords lived in Mayapan with stewards who attended to their needs, arranging for their support by their native provinces. Mayapan, however, was rent by dissension under a later Cocom ruler, who brought in Mexican mercenaries from Tabasco (more Chontales?) to tyrannize the rest of the people. A conspiracy among the other lords was set in train, which finally exploded with the systematic killing of the Cocom family, the destruction of their houses, and the abandonment of the city of Mayapan. Only one son survived, whose descendants later took a terrible revenge in the sixteenth century.

With this revolt, the league of Mayapan dissolved into its component parts. According to Ralph Roys (1957), there are hints that the sixteen independent states found by the Spaniards represented the various former provinces of the Mayapan league. However, the correspondence is certainly not exact, because some of the former provinces had expanded at the expense of others during the ninety years or so after the fall of Mayapan.

Archaeology. Mayapan is an unimpressive set of stone heaps located in some of the poorest agricultural land in the northern lowlands. A number of *cenotes* located in and around the site seem to be its only natural advantage. A low stone wall fortifies the city, enclosing 4,140 buildings, large and small, within an area of about 4 square kilometers (1.5 square miles). Two major periods are to be found at Mayapan, the earliest corresponding to the Toltec phase at Chichen. Mayapan was apparently a small and unimportant center at this time, probably established for the worship of Kulkulkan and as a subsidiary administrative center for the Toltec. This phase is dated about A.D. 1100 to 1250.

The second period is that of the city's political importance, about A.D. 1250 to 1450. Nearly all of the construction now visible dates from this second period. Study of the detailed map of Mayapan yields no evidence of central planning except for the general features of an enclosing wall, the location of the public buildings near the center of the city, and the siting of the major houses on natural rises to catch the breezes.

The civic-ceremonial precinct of the city constituted about 121 buildings arranged in functional assemblages that more nearly resemble the central Mexican patterns than those of their Classic Maya predecessors. A basic ceremonial group at Mayapan included a colonnaded hall, a shrine, an oratory, and associated service buildings. Temple groups included the temple itself, along with colonnaded halls that may have been used either by pilgrims to the temple or by young men being trained for the priesthood. The colonnaded halls are reminiscent of the later *calmecac* (bachelors' quarters) buildings to be found in Tenochtitlan. In many ways Mayapan is also reminiscent of Toltec Chichen in that its principal temple is a smaller version of Chichen's Kulkulkan temple and there is also an Observatory Building.

There are contrasts as well. Mayapan lacks a ball court, skull racks (*tzompantli*), and sweat baths. On the other hand, there are distinctively Maya patterns such as the survival (or revival?) of the stela cult, with at least twenty-five sculptured and plain monuments. This is an astounding number considering the short period of time Mayapan was the seat of government. Moreover, as T. Proskouriakoff (1962) points out, the public center of Mayapan is much reduced in proportion to the other construction at the site.

Of the 4,140 buildings in the city, about 2,100 were used as dwellings, housing an estimated maximum population of twelve thousand (thirty persons per hectare, or seventy-four per acre). These houses, as noted, were sited for cooling by the wind and therefore are scattered at random. Stone property walls surrounded each house or group of houses, resulting in a maze of alleyways instead of planned and formal, straight streets. House plans varied from the simple two-room structure, which was most common, to more elaborate structures, the homes of the nobility. The latter are quite interesting in several ways. There is a clear emphasis on home worship, with nearly every house having its own shrine. The larger houses also had what appear to be family tombs. This evidence for ancestor worship is a continuity from the Classic period. All houses, large and small, are furnished with built-in benches, which we have earlier interpreted as sleeping, eating, and general living places.

In nearly every way and by nearly any criterion, Mayapan represents a cultural decline from the Toltec or the Classic period. Masonry work is poor, with defects covered by heavy coats of plaster. Buildings are smaller and less well planned. Sculpture is crude compared to even the ordinary productions of Classic times.

Mayapan pottery is overwhelmingly utilitarian and generally lacks the elaborately decorated status wares of earlier periods. An exception to this are the incense burners, which are very elaborate indeed. These censers are often massive pottery cylinders with attached molded heads, hands, arms, legs, and costumes of various deities that are overwhelmingly related in form to those of central Mexico. That is, the iconographic symbols and colors are quite similar to those found in central Mexican codices. However, Itzamna, the sky serpent-creator deity of the Maya, is quite a popular subject. The Pinocchio-nosed Yacatecuhtli (god of merchants) is prominent and was known among the Maya as Ek Chuah.

Mayapan then, although not a large city, was a tribute-based, urban administrative city in all formal senses. It contains many signs of dissolution of unifying cultural features that heretofore had held the Maya apart from the rest of Mesoamerica. Its culture represents not so much a resurgence of Maya tradition as an incomplete fusion of Toltec and Maya, according to Proskouriakoff (1955). Perhaps this ideological fragmentation was one reason that Mayapan could only be held together by force. Provincial lords

were virtually captive in the city, and finally, outside mercenary troops were called in to maintain order. The successful conspiracy of A.D. 1446 is evidenced in the archaeological record by the fact that the ceremonial center was torn apart; deliberate destruction and burning are evident in the excavations. The city was abandoned and had become a ruin at the time of the Spanish Conquest, about one hundred years later.

The Sixteenth-Century Maya States

In 1517, when Francisco Hernandez de Córdoba first sighted Yucatan, the peninsula was divided among sixteen separate regional states. Most of these were dominated by a capital city or center that was the seat of a provincial ruler called the *halach uinic*, the equivalent of the *tlatoani* in central Mexico. The ruler was supported by tribute. Lineages of these rulers and nobles were important in determining succession. Ralph Roys notes that "the upper class also had a secret lore handed down from father to son, a sort of ritual in which many words had a concealed meaning not understood by any except initiates. The knowledge of this code was an important evidence of noble descent" (1972, 33). Each town was ruled by a *batab*, who was administrator, judge, and commanding officer and was supported by a farm allocated to him (R. Roys 1957). Records were kept in the hieroglyphic books. Chief exports from Yucatan were cotton, cloth, salt, and slaves, with honey and beeswax also shipped. Nobles, commoners, and slaves made up a three-class social structure. There are indications in several documents that hint at a preferred position for the nobles in regard to land ownership (R. Roys 1957).

An example of a Maya province is Chikinchel, or Chauaca, located roughly in the north central coastal zone of the peninsula behind a long lagoon that yielded the highest production of salt in Yucatan. In 1605 the yield was stated to be 2.8 million to 3.2 million liters (80,000 to 90,000 bushels). Copal was also exported from the province. The Spaniards report very high populations for the area, whose subsistence was based on *milpa* farming and on fishing. The province was one of those ruled not by a *halach uinic*, but by a council of the town rulers, or *batabs*. Ralph Roys quotes the Spaniards to the following effect: "The people of Chikinchel are more precise in their reasoning and more polished in this language, although the latter is the same all over Yucatan" (1957, 104).

The sixteen states occupied most of the northern plains and stretched down both coasts to Champoton (Chakan Putun) to the west and to Chetumal in the east. To the interior and south of these states were the Cehache, about whom we know little more than their name. The Itza inhabited the interior around Lake Peten, but, as with the Cehache, their territory was not considered one of the sixteen northern provinces.



Fig. 8-2. Aerial view of Tulum, Quintana Roo, Mexico. The principal temple-palace was set on the edge of a cliff. It was poorly built, like all construction at Tulum, and the defects were covered over with heavy plaster.

East Coast Yucatan: Tulum, Xelha, and Santa Rita

Although the site of Tulum was probably occupied during the Classic, its major period of construction was Late Postclassic. Tulum's sixteenth-century name was Zama, according to Ralph Roys, and the Spaniards reported it as early as 1518. Juan Díaz, expedition chaplain for Juan de Grijalva, wrote: "Towards sunset we saw from afar off a town or village so large that the city of Seville could not appear greater or better; and in it was seen a very great tower" (R. Roys 1957, 147).

Tulum is a fortified town enclosed by a wall on three sides and by the sea on the fourth (figs. 8-2, 8-3). It is today a somewhat better example of Late Postclassic Maya architecture than Mayapan, which was deliberately destroyed. Again, if we judge from a technical point of view, the buildings are inferior to those of the Classic centers. Sloppy construction techniques led to the slumping and leaning of walls, so that certain buildings have a drunken appearance. Then, too, the architecture is not massive or tall. Defects, as at Mayapan, are covered by heavy plaster coatings. Withal, the site has a certain charm beyond that given by its exquisite natural setting on the edge of the sea. There is an architectonic unity which is readily grasped and which the more grandiose centers such as Toltec Chichen lacked.



Fig. 8-3. View of the principal building of Tulum showing its location. The shallow lagoon protected by a reef allowed canoes to enter this area with relative safety. Tulum's lifeblood was the east-coast canoe trade.

Mural art is one of the most interesting features of Tulum; one building, the Temple of the Frescoes, preserves several nearly complete scenes. Although they are more hieratic and less lively than those dealing with daily life found at Chichen, there is nonetheless a great deal of information in them. Gods are shown that are readily identifiable with those seen in one of the Maya books, the Madrid Codex. These deities engage in various ceremonial activities, and in one scene, according to the interpretation of J. W. Ball (1974), visit one another using the sacred roadways, the *sacbes*.

Modeled stucco motifs embellish the Tulum buildings at the corners and especially in niches over the doorways. So-called diving gods in these doorway niches are actually depictions of the bee gods, the Ah Muzencabob, according to Ralph Roys (fig. 8-4). Wings and antennae are clearly modeled, and the resemblance is close to depictions of honey bees in the Madrid Codex. Indeed, the importance of bees at Tulum and the fact that the Madrid Codex has an entire section devoted to a beekeeper's almanac suggest that the manuscript may have been made on the east coast, possibly at Tulum. Honey was probably an important export, as noted, and Tulum lies along the traditional trade route around the peninsula to Honduras.



Fig. 8-4. An important export from Yucatan in the sixteenth century was honey. This is a damaged example of a "diving god" from over a Tulum doorway, which in reality represents the Ah Muzencabob, the bee gods.

The pilgrimage island of Cozumel lies off the coast from Tulum, and the latter could have served as a port of embarkation from the mainland, although other places are more convenient.

Tancah, another nearby and contemporary site, though smaller, acted as a port, as did Xelha farther up the coast from Tulum. Arthur Miller (1982) found murals at Tancah resembling those at Tulum. A series of lighthouses and watchtowers is stretched at intervals along the east coast. Tulum is in sight of two of these, one to the north and one to the south; these are not only convenient to navigation but also outposts for the city. All of these centers and ports are within the old province of Ecab, but it is not understood what hierarchy of authority existed among them, if any.

To the south of Ecab was the province of Uaymil. Peter Harrison (1981) has done extensive archaeological reconnaissance in the zone and has found large numbers of crude house platforms dating to the fourteenth and fifteenth centuries—to the Late Postclassic period, in other words. No masonry structures are found on these platforms, and the only ceramics are Mayapan-style censers, which were in use long after the fall of Mayapan. It has been suggested that in the general simplification of culture during the Late Postclassic period, utilitarian ceramics were replaced by gourd vessels, *jicaras*,

and indeed, fragments of Late Postclassic wooden vessels have been found in caves in Belize (Harrison 1974).

Chetumal province, which includes the modern town and bay of the same name, was Uaymil's southern neighbor. The famous site of Santa Rita is located near the bay and within the old provincial area. Thomas Gann (1900) found some extraordinary Late Postclassic murals on a stuccoed wall, which are clearly related in stylistic detail to Mixtec art. In this sense Santa Rita shares in what Donald Robertson (1970) calls the "international style" of late prehistoric times in Mesoamerica. However, as Jacinto Quirarte (1982) points out, there are distinctive Maya treatments of the subject matter. Many gods or god-impersonators engage in sacred actions. A Yacatecuhtli (merchant god) figure taps a drum, while another personage faces him with a severed human head in hand. Both stand on what may be fields planted with various crops. Chac, the rain god, and others show great resemblance to their images as depicted on the incense burners. Mayapan-style incense burners were found in association with the murals as well as small ceramic figures depicting motifs characteristic of Mayapan.

Lamanai, on the large lagoon of the New River, is unusual in that it seems to have survived the southern collapse and to have continued into the Late Postclassic and right up to the 1670s. David Pendergast (1981) has developed a long sequence at this center, which includes a great many Early and Late Postclassic materials. Sheet gold, copper ornaments, and ceramics affiliated with northern wares were found in Postclassic burials. Other pottery is very similar to that produced in the Peten-Itza zone of the interior, and still later, Mayapan-style censers appeared. Tulum-style pottery marks the final prehistoric periods at Lamanai. Through the Early and Late Postclassic, building activities sank to a much lower level than during the Classic or Formative. The ceramics and other artifacts suggest that Lamanai may have survived only because it had been taken over during the Terminal Classic by northern Maya who became a new elite. Thereafter, the center became less and less important, although it was clearly tied into the east-coast trade routes. Norman Hammond's work at Nohmul (1982) and that of Diane Chase (1985) at Santa Rita in the same zone of Belize have also indicated a southward intrusion of Maya from Yucatan.

Fragmentary as the archaeological record is, there is every evidence of a well-organized, culturally and economically linked series of centers along the east coast of Yucatan reaching down to Honduras, which was the major source of cacao. Columbus, on his fourth voyage, encountered a Maya sailing canoe out of sight of land in the Bay of Honduras. The reason that one son of the Cocom family escaped from the Mayapan massacre was that he was on a trading expedition to Honduras. J. A. Sabloff and his colleagues have argued that after the Toltec fall, the new Maya rulers were a

merchant class, their power ultimately based on long-distance trade (Sabloff and Friedel 1975).

On the west coast were the plains of Tabasco, the homeland of some of the greatest traders of sixteenth-century Mesoamerica, the Chontal Maya, including the Acalan. These Chontal were ultimately related to the Itza and to those groups that had broken into the Classic Maya area. In the sixteenth century they acted as middlemen between the other Maya groups and the rest of Mesoamerica. The dominant group within Acalan was the merchant class. No doubt much of the canoe traffic that went past the east-coast centers originated in Xicalango and Potonchan, the “free ports” near Acalan. Both were neutral ground where normally hostile groups could meet in peaceful trade. Cozumel Island acted in the same way, bolstered by its status as a pilgrimage shrine. It is interesting that Cozumel until recently was a free port. Acalan is a symbolically appropriate name, meaning “canoe land.” The area is crisscrossed with the estuaries of a number of major rivers. A. H. Siemens and D. E. Puleston (1972) found a series of short canals along the Candelaria River, which J. E. S. Thompson (1970, 3–47; 1974) suggests were fishponds. There is some ethnohistorical evidence for this. However, raised-field techniques were also used in the Candelaria bottoms. These techniques are tied to the high populations reported for the zone by the Spaniards. It was no accident that Cortés contacted the Acalan people when he proposed to march across the peninsula to Honduras. These far-ranging traders knew the major and minor routes of the area intimately. Enclaves of Nahuatl speakers from the highlands occupied several towns in Tabasco, and Xicalango itself had Nahuatl rulers. Commerce was indeed the chief motivation for many features, events, and characteristics of the Late Postclassic.

Important excavations and other studies have been done recently at the site of Champoton, on the river of the same name. As noted before, the center was an important one in the Preclassic and had its ups and downs in the succeeding periods. These seem to correlate literally with the rises and falls in the levels of the Gulf of Mexico and the Champoton River (Folan et al. 2004). While the details of this correlation are beyond the limits of this book, suffice it to say that the data strongly back the ideas of many scholars that connect the successes and failures of Maya prehistory to climatic history. The city of Champoton continued to be an important port throughout the Late Postclassic and Early Colonial periods.

The Itza Remnant: Tayasal, Topoxte, and Macanche

It is ironic that the last surviving remnant of Maya culture was that of the Itza, who had been expelled from Yucatan in the thirteenth century and who were not considered Maya enough to be included in the list of Late Postclassic states. The historic center of the Itza was a town called

Tayasal located on an island in the large lake of Peten Itza. Cortés himself visited the Itza, and he was received by them in 1526 on his epic march to Honduras. He was in straitened circumstances and did not attempt to conquer the Itza. We have his description as well as those of several Spanish priests who visited Tayasal during the sixteenth and seventeenth centuries. It was not until 1697, however, that the Spaniards made a serious effort to reach Tayasal with sufficient military power to destroy the Itza state. When they did, it took only a one-day battle to bring an end to the last fragment of native Mesoamerican civilization.

Tayasal's site is today occupied by the town of Flores, which effectively blocks much excavation (G. D. Jones, Rice and Rice 1981). The best hope of information on the Itza comes from historical sources and from William Bullard's work at contemporary sites (1970b). George Cowgill's work in the area sets the archaeological stage for such information (1963). Using such combined data, the sequence and nature of events from the end of the Classic to the arrival of Martín Ursua, the conqueror of 1697, can be traced.

Tayasal was only one of a number of Postclassic settlements around the favored ecological zone of the central Peten Lakes, including Lakes Peten, Macanche, and Yaxha. Evidently surviving populations concentrated around these lakes after the disasters of the ninth and tenth centuries. Small Tulum- and Mayapan-style centers were established. One of the earliest of these was Macanche. Later, in the thirteenth century, Topoxte was developed as a small, compact capital of a petty state containing about half a dozen temples and a like number of open halls. The halls are similar to those found at contemporary Mayapan. Architectural similarities to the Tulum group of sites are so striking that they are clear indications of contemporaneity and of the same specific cultural tradition. Bullard (1973) thinks that Tayasal must have had much the same appearance as Topoxte, judging by Spanish descriptions. Topoxte evidently overlapped with Tayasal in their occupations, although it was abandoned by 1697, whereas Tayasal obviously was not. Bullard notes that ceramic and architectural continuities indicate that when the Itza moved south in the thirteenth century, they did so as an elite group, taking over an already developed resident population around the lakes.

The Itza were only following a pattern established long in the past, one which they apparently had practiced with success several times in their own history. During the whole of the Postclassic period, the large Classic centers of the area remained abandoned but not forgotten. Stelae were moved about, and at Tikal Late Postclassic people in the thirteenth century put a grave into the inner rooms of Temple I, leaving burned copal, incense burners, and characteristic pottery. At Río Azul's Temple A-3, similar late incense burners were found. But Tikal and other Classic sites were mainly left to molder. Today, the Maya of the northern and central lowlands burn

incense to the “kings” and “queens” on the stelae to propitiate their spirits. The Lacandonese until recently made prayers and burned incense in special burners in the Classic temples at Yaxchilan, which still have special status and the power to awe.

The Maya Highlands

The chronological definition of the culture histories of the various regions of the Maya Highlands is Early Classic, A.D. 300–600; Late Classic, A.D. 600–900; Early Postclassic, A.D. 900–1250; and Late Postclassic, A.D. 1250–1540.

Although useful for schematic purposes, this chronological control is highly unsatisfactory for other things—measuring cultural evolution, for example. Continuous sequences have been defined for only four valleys in the Guatemalan highlands, those of Las Vacas (Guatemala), the Salama, the Acul zone, and the Cotzal, the latter as yet unpublished. To the west, the Chiapas highlands do have a long sequence, defined mainly by ceramics, worked out by T. P. Culbert (1965), but that was a distinctly marginal region even within the Maya Highlands. Eventually, chronologies will be worked out for each small region, a complex job but rewarding in the variety of cultural events that they will reflect.

In the fragmented and broken topography of the Maya Highlands, small Classic states arose about which we know little. We know that they consisted of a number of small ceremonial and elite residential centers surrounded by relatively dense populations. These centers consisted of temples, palaces, and burial places of the elite, along with a number of ball courts, which later were very popular (figs. 8-5, 8-6, 8-7). These Classic sites were generally located on valley floors and were more or less open and unfortified (Kidder and Smith 1951). After about A.D. 1000 there was a striking transformation, with the dominant centers in each zone relocated to defensible ground, usually on the tops of ridges or mountain spurs. These sites were bolstered with defensive ditches, high terraced walls, and free-standing walls. The sites of Río Blanco, located on a river bottom, and Chutixtiox (fig. 8-8), located on a high ridge, exemplify the change and contrast in a single region. Both are in a zone later dominated by the Quiche, and it is possible that these centers represent the Classic and Postclassic Quiche.

In certain isolated and no doubt backward areas such as the Cotzal Valley, life continued more or less undisturbed. No perturbation of the basic patterns laid down in the Early Classic can be seen until the Spanish Conquest smashed the cultural structure. The religious focus in these areas was on ancestor worship, as reflected in family tombs used for several generations, accompanied by several phases of pottery offerings.

Small ceremonial centers were built around the tombs of the more important lineages. In the sixteenth century these lineages were known as *tinamitl*,

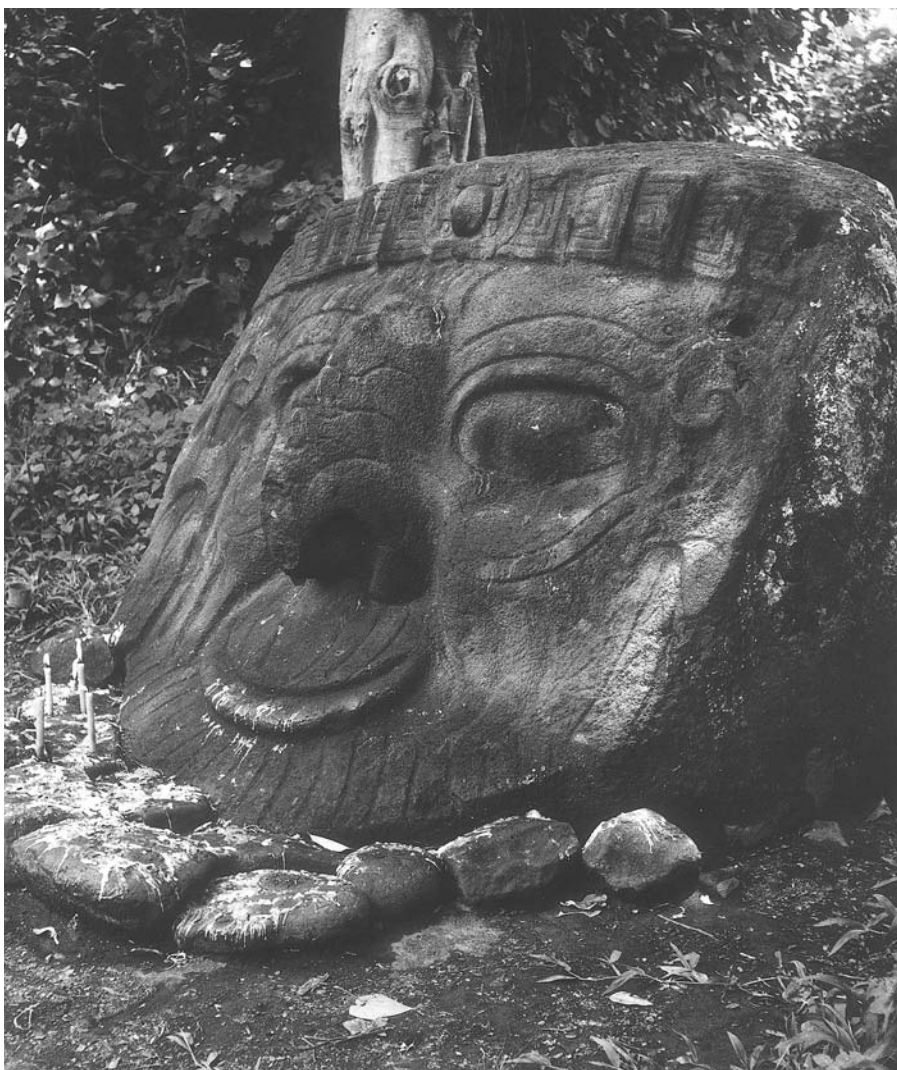


Fig. 8-5. An owl god sculpture at El Baúl, Guatemala. Still worshipped today by Indians who come to this Pacific coastal plain site to work in the sugar and coffee plantations.

and Pierre Becquelin has excavated several such centers in the Acul zone (1969). In one tomb near Ilom, Early and Late Postclassic pottery was found along with a clay figure of a horseman from the early colonial period. Many of the old lifeways survived into the sixteenth century in isolated and marginal areas.



Fig. 8-6. Main temple at Zaculeu, Huehuetenango, Guatemala, capital of the sixteenth-century Highland Maya Mam. The site was excavated and restored by the United Fruit Company.

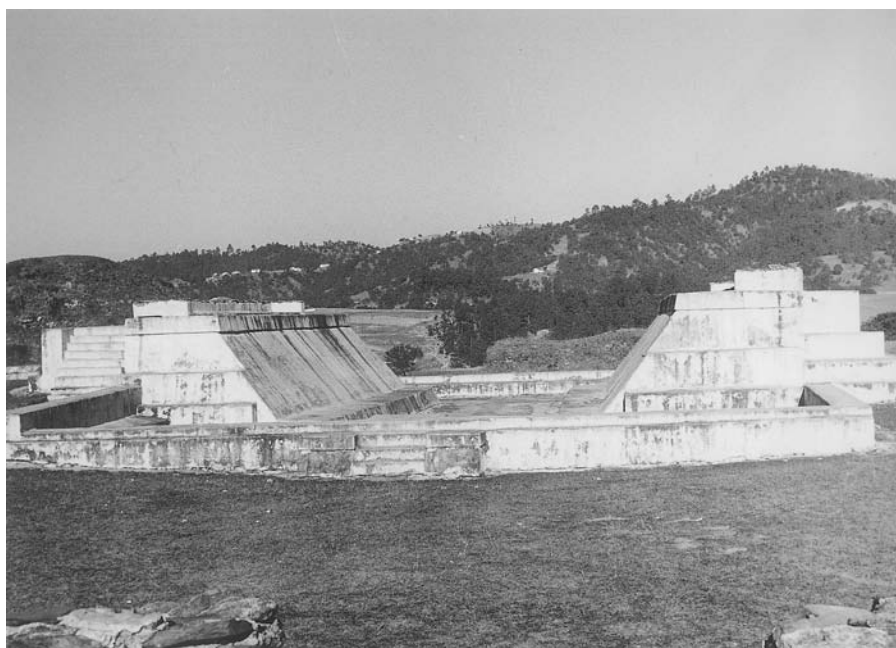


Fig. 8-7. The restored ball court at Zaculeu, typical in being an enclosed zone in the shape of a capital I.

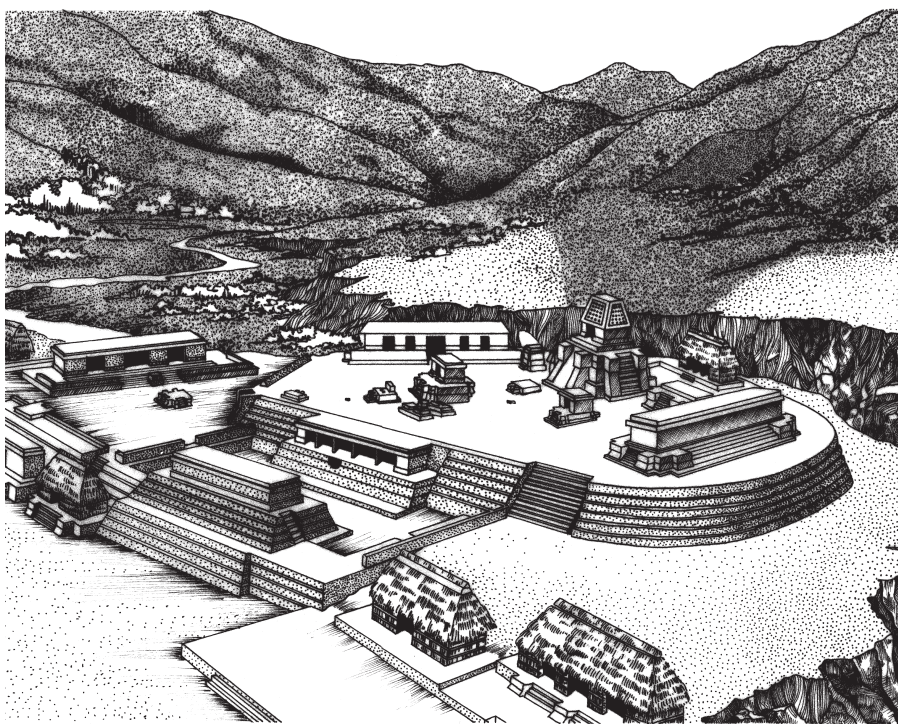


Fig. 8-8. Reconstruction drawing of the fortress city of Chutixtiox, Quiche, Guatemala. The Quiche were the most powerful of the Highland Maya groups and were in the process of military expansion when the Spaniards arrived. (After T. Proskouriakoff)

Certain of the larger fortified centers in the largest and most populous regions became the nuclei of the Late Postclassic Highland Maya states. The Cakchiquel had a capital at Iximche and the Quiche at Utatlan. Like the Itza state centered around Tayasal, these groups were directed by ruling houses that were Mexicanized in certain ways, especially ideologically. These houses claimed descent from the Tula Toltec and documented such claims after the Spanish Conquest in manuscripts such as the *Título C'oyoi*.

Perhaps one hundred years before the Spanish arrived, the Quiche, under a ruler named Quicab, were actively engaged in a series of aggrandizing moves that had greatly enlarged their territories. Their capital at Utatlan was a somewhat larger version of the usual temple-open hall groups (Carmack 1973). Excavation and settlement-pattern studies have added immense amounts of detail to the record (Carmack and Weeks 1981). Based on both documentary and archaeological data, R. M. Carmack's group was able to suggest former locations within Utatlan for the major lineages. Lineage residences were defined, along with ritual and political (council) zones. These

residences were called by a term which means “big house” in Quiche Maya; a term similar in meaning to that of the Aztec *calpulli*, as seen in the next chapter. On the other hand the Quiche term for king, *ajpop*, is nearly the same as the translated term for lord, *ah-po* or *abau*, in classic Maya hieroglyphs, indicating the mix of Mesoamerican-wide elements in these late cultures.

The Cakchiquel revolted against the Quiche and established their own state. About 1524 the Cakchiquel king was in dire straits due to plagues from the newly introduced European diseases, revolts, and wars with the Quiche. He made the fatal error of sending to the Spanish for help. They came and promptly, under the cruel Pedro de Alvarado, conquered Quiche, Cakchiquel, and all.

The Cakchiquel capital of Iximche has been excavated and partially stabilized by George Guillemín (1966). The site is located on a defensible and beautiful spur of land. Large temples, dance platforms, ball courts, and multiple-roomed structures, presumably palaces, make up the center (fig. 8-9). Guillemín has found some excellently preserved fragments of polychrome murals, showing skulls, hearts, and other motifs reminiscent in subject matter and style of central Mexico.

Utatlan and Iximche were the capitals of monarchically centered states. Zacaleu in the west was the capital of the Mam (Woodbury and Trik 1953), and Mixco Viejo to the east (Lehmann 1968) was the chief town of the Pokomam. There were others. Bolstered by their fortresses, which acted both as frontier security and regional places of refuge, these states were continually in contention with one another. In political organization, size, and warlike nature they resembled the Mixtec states.

Most of the Highland Maya groups were conquered by Alvarado in 1524, and their descendants live, in many cases, near their ancestral centers. The remnant of the Pokomam inhabitants of Mixco Viejo, conquered in blood and fire, were settled in present-day Mixco, now a suburb of the city of Guatemala.

The Chiapas highlands show a set of interesting trends. Like much of the northern highlands of Guatemala, this area was sparsely settled or vacant during the Formative. During the Classic a pattern of small, open centers was established. Late in the Early Classic a considerable growth in population took place, followed in the Late Classic by the development of large, nucleated fortified towns. R. McC. Adams (1961) argues that independent communities were the dominant political form at this period. During the Early and Late Postclassic periods, the trend was toward larger centers that forcibly organized large numbers of people and the most productive lands into larger political units. These never reached the size of those to the east or north, however, and Chiapas remained a backwater area until the Spanish Conquest and, in fact, to the present day.



Fig. 8-9. Iximché, Chimaltenango, Guatemala, one of the several capitals of regional Highland Maya states in the sixteenth century. Temples and platforms for perishable palaces are to be found in this fortified city of the Cakchiquel Maya.

The Basin of Mexico

Within this richest of all the central plateau zones, there was a confused period (ca. A.D. 1175–1425) that followed the collapse of the Tula Toltec. In a period of about 250 years, several events documented by the chronicles occurred. There was a major movement of peoples from north to south. Some were civilized remnants of the cultured groups at Tula itself, others were regional Mesoamerican peoples from the outskirts of the Toltec empire, and still others were fierce barbarians from the northern desert steppes. All were called Chichimec with notable lack of discrimination in many of the chronicles.

Pedro Carrasco (1971b) has masterfully separated these various groups and traced their fortunes. The Nonoalca were a group present at Tollan-Tula and settled in the Itzocan region of Mixteca-Puebla. Another group from Tula came to rest at Culhuacan, in the southern Valley of Mexico. The Mexica (Aztec) were a part of the least civilized groups. Xolotl, a legendary leader of some of these hunting tribes, reputedly established the ruling dynasty of Texcoco on the eastern lake shore. A famous codex records the wandering of the various subgroups.

After the fall of Teotihuacan, various city-states in the Basin of Mexico were established and maintained the traditions established by Teotihuacan, although evidently under the domination of Cholula. Azcapotzalco, on the western edge of Lake Texcoco, is especially noteworthy for its epigonal forms of Teotihuacan traditions in figurines, pottery, and presumably architecture. At some point fairly soon after the fall of Tula, Carrasco suggests that Culhuacan and Coatlican may have formed an alliance with Azcapotzalco. However, Azcapotzalco came to dominate the alliance and the rest of the valley, especially under a redoubtable leader named Tezozomoc. The final reformulation of these shifting alliances came in 1428, when the Aztec-Mexica of Tenochtitlan formed the Triple Alliance with Texcoco and the small state of Tacuba and overthrew Azcapotzalco. After that, the Acolhua from Texcoco and the Aztec came to dominate the alliance. After the death of the great Texcocan ruler Nezahualcoyotl, the Aztec moved gradually into the position of major partner, which they occupied when the Spaniards arrived.

The chronicles of various city-states in the basin are replete with dynastic details and ethnic migration stories that rival the tangled affairs of European principalities in their Byzantine intricacy. In many cases, however, not a great deal of culture history of any significance is to be found in the tales of elite intermarriages and lineage rivalries. The Aztec, being brash and barbarous outsiders, however, depended for their very existence on the alliances that they could make with more powerful neighbors. In these arrangements, until 1428, they were like many other petty Mesoamerican states. Their great leap forward in social organization and ideology led

irreversibly to a new order. This transition occurred under the baleful Tlacacl and made possible the spread of an empire beyond the basin.

West Mexico: Classic to Protohistoric

The concept of "Greater Mesoamerica" has been advanced by S. S. Gorenstein and P. C. Weigand (Gorenstein 2000; Foster and Gorenstein 2000; Weigand and Beckman 1997). These respected scholars have argued for the inclusion into the Mesoamerican sphere of the western and northwestern areas of Mexico. Their definition includes many zones, especially those in the two or more corridors running toward the "Greater Southwest." These zones include the coastal areas of Sinaloa and Sonora, the interior (east) side of the Western Sierra Madres through Casas Grandes, and a sort of alternative interior route through present-day Zacatecas and the site of La Quemada. There is no doubt that the western zones from the Central Plateau to the Pacific Coast eventually joined Mesoamerica as members in the great interaction sphere. The northern corridors are more problematical, in that even Weigand admits their temporary and frontier nature in one case. Further, the site of Casas Grandes and the Trincheras area also have been claimed by southwestern archaeologists as falling within the "Greater Southwest" area.

This overlap in claims indicates to this author that the zones had their own cultural traditions and are separate culture areas, somewhat like those found on the southeastern border of Mesoamerica. It may be that the use of the concept and term "Frontier" as suggested by P. D. Sheets (2000) would smooth out matters; however, this is not the place to debate this question. In this book the West Mexico area is treated as a part of Mesoamerica, while the Northwest Mexico area is only intermittently so treated and is otherwise seen as a separate entity.

Present evidence based on carbon 14 dates indicates that West Mexico can largely be correlated with the rest of Mesoamerica using the Early Classic, Late Classic, and Early and Late Postclassic rubrics. However, these are strictly chronological in utility and do not by any means explain the cultural rhythms of the west, which were often quite distinct from those of central Mexico or other parts of Mesoamerica. The distinctions between western Formative cultures and those of the Early Classic period are minimal in many regions, although Teotihuacan items do appear on horizons in the period of A.D. 400 to 700. The Late Classic is again a matter of detailed chronological and technical distinction in the main, except at a few sites.

Amapa in Nayarit is one of those centers that takes a quantum jump in the Late Classic stage or just at the end of it. Early Postclassic dates are from about A.D. 900 to 1200; this is a time of more general disturbance and development than had been seen before. Most of the metal from Amapa

dates from the Early Postclassic period, which may indicate Central American and even South American contacts. Tula-related items show up in many western sites in the Postclassic period, perhaps distributed through a *pochteca* network. Cojumatlan in Michoacan was occupied at this time.

The date of Tarascan culture's emergence as a distinguishable entity is uncertain; Rubin de la Borbolla's (1941) date of A.D. 1000 as early Tarascan is strictly an estimate. It seems likely that Tarascan culture had to have been in existence at least by A.D. 1250 in order to have developed to the extent of complexity that it did before the Spanish Conquest. Therefore, A.D. 1000 as a starting date may not be far off the mark. According to documents, A.D. 1390 represents the starting date of Tarascan expansion through the west.

Classic to Postclassic (A.D. 300–1200)

By the end of the Formative period, as seen in chapter 4, West Mexico had generally achieved the level of village-centered, regional cultures. Special burial modes, particularly the shaft-tomb complex in Jalisco and Nayarit, seem to indicate ideologies related to the proper disposal of the dead. These religious cults, if that was what they were, began to die out during the Classic period, and by the beginning of the Late Classic, shaft tombs were no longer being built. Small regional centers continued but with some rearrangement of settlement. Red-on-brown ceramics became a generally distributed group of styles during the Late Classic period. The site of Amapa in Nayarit provides a crucial sequence for understanding what happened (see Pendergast 1962; Grosscup 1961; Meighan 1976).

Amapa is located between two large rivers only fifteen miles from the sea on the coastal plain of northern Nayarit. Easy access to the ocean was thus available. The site itself is 1.5 square kilometers (0.6 square miles) and consists of some two hundred mounds, large and small and of all shapes. Apparently, during the Early Period (A.D. 250–700), Amapa was only a large village consisting mainly of wattle-and-daub houses. After a period of abandonment, the site was reoccupied and dramatic changes took place. Most of the large construction at Amapa was built during the Late Period (A.D. 900–1200). Many small mounds supported only wattle-and-daub houses, but large platforms of dirt and river stones supported temples of perishable materials, and an I-shaped ball court was built.

Perhaps the most interesting thing to happen at Amapa was the introduction of metals around A.D. 900. A cemetery that largely dates from this period provided many of the metal items found, 205 in all, including needles, awls, tweezers, fishhooks, wire, pins, and many types of bells. Mazapan-style figurines like those found at Tula and throughout Mesoamerica on the Toltec horizon are associated with metallurgy at Amapa. Also found in the metal-yielding graves were finely decorated incised bowls and many

handsomely painted polychrome vessels. The chile grinder, *molcajete*, is characteristic of this period.

Both forms and motifs show close affinities with Postclassic central Mexican cultures, and there is little doubt that western Mexico was more fully integrated into Mesoamerica at this time than at any time before. For example, many of the animals painted on the polychromes are very similar to some of those found in the Codex Borgia group from the Mixteca-Puebla area. At least one Amapa monochrome vessel has a Plumbate form. At the same time, acting as the undoubted agency for the introduction of metallurgy to Mesoamerica placed the west in an unaccustomed and innovative role.

Together with metals, *molcajetes*, and Mazapan figurines, Robert Lister (1949) has also defined the Postclassic by the appearance of *malacates*, or spindle whorls. It may be that superior strains of cotton from South America were introduced at the same time as metals, but in any case, spinning (and presumably weaving) became a widespread West Mexican activity after A.D. 900.

In Michoacan during the Early Classic period, red-on-brown pottery appears at the cemetery of Apatzingan. *Molcajetes* and *malacates* both appear at Apatzingan in the succeeding phases, and many other sites show this sequence of events, confirming the widespread nature of these horizon markers.

The general picture of Classic and Postclassic western Mexico is one of regionalized cultures, mostly centered around villages but with an occasional larger ceremonial center as a focus. Ixtepete and Ixtlan del Río, large sites in Nayarit, are examples of the larger centers. These small regions responded differentially throughout the period A.D. 300 to 1200 to influences from central Mexico that were transmitted possibly from South America and probably from Central America. The northern part of the zone was involved in the expansion of Mesoamerican cultures northward in Teotihuacan times and, later, during the Toltec period. Internal motivations to cultural complexity may have been largely based on population growth. All indications are that during the Classic and Postclassic periods population increased and that elaboration of sociopolitical arrangements was one sign of increasing complexity. At the time of the Spaniards' arrival, most of the area was either dominated by regional centers such as Cojumatlan or incorporated into the Tarascan empire (Chadwick 1971; Meighan 1974).

Much work remains to be done. For example, the Huetamo zone in Michoacan, north of the Balsas River, has a great number of large sites that appear to date from the Classic and Postclassic. These sites have major structures, stelae, and distinctive ceramics (Gorenstein 2000, 336). The fortress city of La Quemada in Zacatecas has been explored and is thought to have been mainly an Epi-Classic-period center, dating about A.D. 700 to 850. By A.D. 900 it was abandoned. Forty-eight stelae have been reported by

Joseph B. Mountjoy (1991) in the far zones of Jalisco and Nayarit, although most of these are apparently either plain or decorated with petroglyphs. David C. Grove (1970a, 1981) has several times indicated that some of the answers to the problems of culture history and development of Mesoamerica lie in the west. A beginning has been made, but only that.

The Tarascans (A.D. 1000–1521)

Pre-Tarascan remains dating A.D. 400 to 900 have been found in the area of the Tarascans' later empire. At least five large and widely spaced ceremonial centers are known; however, lacking detailed information from them, it is difficult to show any link between them and the later Tarascans (Gorenstein 2000).

The Tarascans are anthropologically famous for having a language that is unrelated to any other known Mesoamerican language and for having developed an "empire" that successfully resisted the aggressive advances of the Aztec. The *Relación de Michoacan* (Craine and Reindorp 1970) gives considerable information about the Tarascans, and the Tarascans themselves are still around to be consulted, at least on their language and other surviving matters of interest. Morris Swadesh, with characteristic daring, has linked the Tarascan language to Zuni in the Gran Chichimeca and to Quechua in South America (Chadwick 1971). J. Greenberg (1957) has suggested that Tarascan is Macro-Chibcha, another large South American linguistic family. This fits somewhat with the possibility of West Mexican contact with South America, as evidenced by the introduction of metalworking. A bit of possible additional archaeological evidence is in the form of a two- or three-story adobe building with a trapezoidal doorway found near Arcelia, Guerrero, according to reports. Trapezoidal doorways and multiple-storied buildings are characteristic of the Inca area, which is also Quechua-speaking. However, Arcelia is possibly outside of Tarascan territory. Mountjoy has found pottery farther west that appears to be very similar to high-culture ceramics of South America—specifically, stirrup-spouted jars. The problem of possible contact and its nature is still a question of great complexity and one on which too little evidence bears.

Fortunately, Shirley Gorenstein and Helen Pollard have done a great deal of fieldwork in the Tarascan area as well as among its documents and have enlightened us considerably about the nature of the Tarascans. The following depends on their accounts (Gorenstein and Pollard 1983; Pollard 1980; Gorenstein 2000).

The Tarascan state occupied about 75,000 square kilometers (46,500 square miles) and included within its boundaries various ethnic and linguistic groups. Thus it fulfills the formal qualifications required of an imperial system. The *Relación de Michoacan* relates that the Tarascans were ruled by a priest-king-god who governed a large political unit. In terms of area

it seems to have been one of the largest political units in Mesoamerica at the time of the Spanish Conquest. The empire was administered by a wide variety of officials who handled matters such as taxes and censuses.

Although 340 settlements are mentioned by the *Relación de Michoacan*, only four of them qualified as cities, and they were located within the Lake Patzcuaro basin. The largest was the capital, Tzintzuntzan, which had been founded about A.D. 1000 as a center for the worship of two important deities. By 1350 the center had been transformed into an urban area sprawling along the lake shore, with a population of between twenty-five and thirty-five thousand people. Archaeological survey has detected four districts that are the probable residence zones for four classes: elite (upper and lower), commoners, and ethnic foreigners. Wards (*barrios*) for the various social and occupational groups survived in modern Tzintzuntzan into the twentieth century. The residence of the king was near a set of burial temple-platforms, the famous *yacatas* (figs. 8-10, 8-11). The king was buried with great pomp, and several retainers went with him to the after-life. The shrine of the major Tarascan god, Curicaueri, was also located nearby. The king's palace was set on a large platform and included offices where councils met, civil and criminal courts, and storehouses where tribute was stored and allocated. Workshops, mainly having to do with the production of stone tools, have been found within the city. We also know that there were specialists in the production of ceramics, featherwork, bronze, copper, and gold objects. These artisans were organized into craft guilds, each with a patron deity. There were also weavers, bureaucrats, priests, medicine men, palace custodians, storytellers, merchants, spies, messengers, and couriers.

Burials found in the *yacatas* contain exotically shaped ceramics, including many "foreign vessel" forms, decorated by negative painting. Also found in the burials and elsewhere are examples of virtuoso metalwork in gold, silver, and copper. Excellence in metallurgy is matched by many fine productions in obsidian, turquoise, and other stone. Stone sculpture emphasized coyotes, but seated human figures and *chac mools* were also common.

Tzintzuntzan and its court presided over an exceptionally clear hierarchy of settlements. Three of these were nearby and had populations of about five thousand each. One of them, Ihuatzio, was a kind of fortified country capital to which the court apparently repaired at times. Three *yacatas* are present, and it is mentioned in the chronicle that in 1520 Ihuatzio was the royal treasury.

The settlement pattern of the Tarascans was essentially rural, however, and most people lived in hamlets, villages, and towns. In fact Gorenstein and Pollard contrast the Tarascans with the Aztec in the degree of political/administrative centralization that they achieved. They attribute this to the fact that the Tarascans had no previous complex societies to deal with or to incorporate within their empire. They therefore were able to devise a



Fig. 8-10. The rounded part of a keyhole-plan platform (yacata) in the former capital of the Tarascans, Tzintzuntzan. These platforms were the burial places of the rulers and the sites of temples dedicated to a local variant of the wind god. (Courtesy Franklin C. Graham)

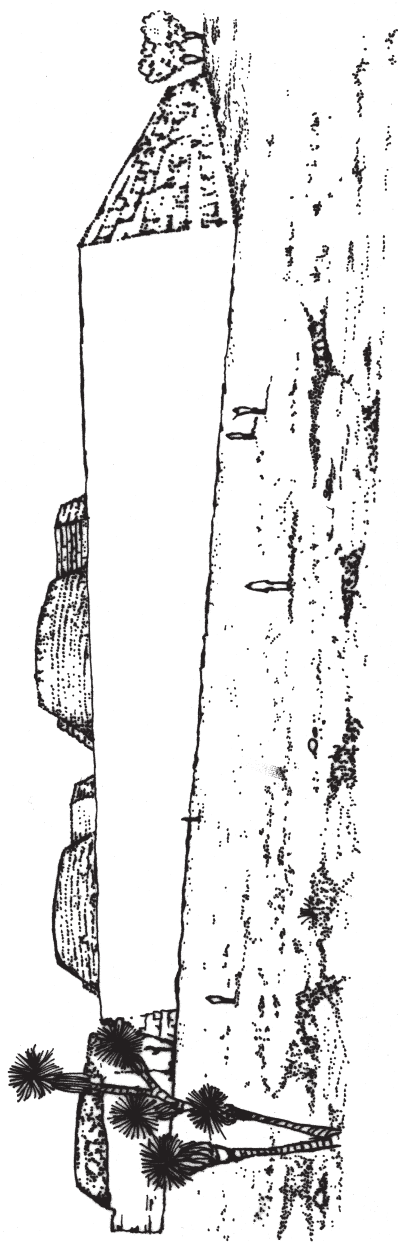


Fig. 8-11. A reconstruction drawing of the very large basal platform supporting the yacatas at Tzintzuntzan.

highly rationalized administrative structure that included professional soldiers. Society was integrated by making lucrative offices available to nearly all of society.

Economically, there were the usual local and regional markets, which were also hierarchically tied into a system with Tzintzuntzan at the top. The state derived great amounts of tribute on a regular basis, much of which was used to support various governmental activities, including the army. War was waged after the harvest was in, in good Mesoamerican manner. Spies (perhaps *pochteca*) were employed for intelligence purposes. The Tarascans resisted the Aztec with a chain of fortified cities and with a professional army. In the latter they were quite different from their Aztec enemies or other Mesoamericans who largely relied on militia armies. Eventually, a large buffer zone with small statelets developed between the two empires.

Oaxaca: The Zapotec

The Postclassic Period or Monte Alban IV (A.D. 700–1000)

In the Valley of Oaxaca, three major sites dating from the period after the abandonment of Monte Alban have been at least cursorily examined. These Monte Alban IV sites are Lambityeco, Yagul, and Mitla, all in the Tlacolula arm of the Central Valley. A number of others have been located. All appear to have been secondary centers during Monte Alban's great period and to have expanded after the mega-center's demise (Marcus and Flannery 2000, 391). Further surveys by R. E. Blanton and his colleagues have added more data (Blanton and Kowalewski 1981).

Lambityeco (Paddock 1983) is an open site on the valley floor. It is dated within Monte Alban period IIb and early IV. The site was occupied by at least A.D. 600, judging by some early types of Fine Orange pottery found there. Over two hundred mounds constitute the site and cover an extensive area. Its site plan is similar to that of Monte Alban IIIb culture, with the same style of patio arrangement of large buildings and the same sort of subpatio tombs. One large tomb at Lambityeco has the usual ante-chamber with a formal facade over the entrance to the burial room. The facade includes finely done stucco heads that may be portraits of the persons buried inside (fig. 8-12). The building immediately above the tomb carries a stucco decoration, the figures, and calendrical names of persons who may have been the parents of the man buried below. Celebration of distinguished and ruling lineages continued, therefore, from Monte Alban III times and certainly into the historic period.

John Paddock, the excavator (1983b), sees in Lambityeco a reflection of the decadence and decline of Monte Alban culture. It does appear possible that differences between Monte Alban and Lambityeco could simply be those between a metropolitan center and a county seat. In early Monte Alban IV, Lambityeco was one of several large centers surrounded and



Fig. 8-12. A stucco relief found on an elite residential platform at this fifteenth-century Zapotec site at Lambiyeco, Oaxaca, Mexico. The relief shows a married couple and gives their names. They were buried below their former house in a tomb.

supported by large populations. Blanton and S. A. Kowlewski (1981) feel that there were ten or twelve such communities after the dissolution of Monte Alban, each representing a petty state. However, many of these political units were amorphous and decentralized, especially as reflected at Jalieza, with its sixteen thousand people but no central civic precinct. Lambityeco seems to have been abandoned well before the end of period IV. Perhaps the population moved to nearby and more defensible Yagul.

Yagul is located on a flat spur running away from a large butte or mesa. It was apparently occupied as early as Monte Alban I, but this earlier material is so heavily covered by IV and V deposits that it is difficult to say anything except that the early settlement was small. Excavations at the site have revealed evidence of a "building boom" at the beginning of period IV and coincident with the abandonment of Lambityeco.

Period IV sculpture and ceramics reveal the same sorts of attitudes toward the distinguished dead as in earlier periods. The burial tradition continued (though with a notable decline in technical and aesthetic quality) through the valley and no less at Yagul. Effigy vessels in the form of "bat-claw" feet are particularly characteristic of the period. Carved rectangular stones are finely detailed and carry scenes of what are apparently married couples seated facing each other. J. Marcus notes that sculptural subjects shifted in periods IV and V from state visits and conquest monuments to depictions of royal marriages and other genealogical matters (1980, 1983; Marcus and Flannery 2000). Even so, this class of monuments retained their original function to the end—that of political history. A tomb mural from this period at Monte Alban (Tomb 125) also seems to show the same shift in subject and includes a genealogical register (Miller 1988).

Mitla is located about six miles farther east in the Tlacolula arm, on a small river. Traces of Guadalupe-phase and of Monte Alban I and II occupations have been found, but no information of substance is yet available. Two groups of major structures dominated by temple buildings and several tombs and burials represent the IIIa- and IIIb-period ruins. However, the modern town of Mitla lies around these buildings, and the site may have been much more extensive than it seems. The location of these two temple groups is open and undefended. Period IV pyramids are located in a fortress on a mesa above the river but have not been explored. The shift is important, however, and reflects more disturbed times.

All of the above sites date from a time during which the Mixtec were pushing into the Central Valley from the north, down the Etla arm. According to Ronald Spores, the major period of Mixtec aggression was in the Late Postclassic, but certainly the fragmentation of Early Postclassic Zapotec cultures and the breakup of the Monte Alban centralized state indicate considerable pressure during Monte Alban period IV. It will have been noted, however, that Blanton and S. A. Kowalewski (1981; Blanton 1983) and

Marcus (1980) argue for a collapse of Monte Alban based on the overwhelming costs of maintaining such a center. In any case this is a period of political "balkanization."

The Late Postclassic Period (A.D. 1000–1521)

In some ways the mysteries of quasars and black holes in outer space are easier to explain than Monte Alban periods IV and V and their relationships. The work of Donald Brockington (1973, 1974), Spores (1972), Paddock (1966c, 1974a, 1974b, 1983), and Blanton and Kowalewski (1981) has made the situation somewhat clearer. The difficulty lies in the history of Oaxacan archaeology. The site of Monte Alban was the first to be intensively excavated. Its periods were naturally thereafter "stretched" to apply to the whole valley. However, ethnic terms were then applied to the valley-wide periods. Monte Alban IV became, ipso facto, Zapotec, and Monte Alban V became Mixtec. It is very difficult to determine the ethnicity of the ancient owner of a piece of pottery. Paddock, Brockington, and Spores have all pointed out that trade of luxury (elite) goods can distribute them far beyond their origin points. There is documentation indicating that Mixtec products were distributed through an elite trade network that stretched over central Mesoamerica. Further, it is known that Mixtec and Zapotec elite were intermarrying as early as A.D. 1250. Brockington, in the Mixtec area of Miahuatlan, south of the main valley, found that the "Mixtec" gray common wares were distinct from those of Nochixtlan-Yanhuitlan and other still undefined parts of the Mixtec area, indicating that there was a great deal of variation within Mixtec culture itself. Finally, a conference of Oaxacan specialists in 1970 found that "Mixtec" gray ware distribution in the Valley of Oaxaca during periods IV and V was nearly identical to the distribution of the Zapotec immediately after the Spanish Conquest. Ignacio Bernal some time ago suggested that Mixtec and Zapotec culture fused in some respects during the later periods and offered some evidence for this having happened in period V (1965b).

Considering all of the above, we shall use the following principles to deal with late prehistoric Oaxacan culture. Elite cultural material found in formal tombs and particularly Mixtec polychrome pottery may indicate either Mixtec or Zapotec elite culture, and the decision must be made on other grounds. Documents such as the local *relaciones* and Father Francisco de Burgoa's writing have proven to be quite accurate and can be used to make such distinctions. Tribute networks in Late Postclassic times included towns with foreign ethnic groups within them, and therefore different cultural products could show up in elite contexts. Brockington's Miahuatlan work shows that Zapotec and Mixtec cultures varied widely within themselves. In other words, as we have known for many years, linguistic uniformity does not mean cultural uniformity. On the other hand, there was

apparently a considerable uniformity of culture among the common folk of both linguistic groups in single geographical regions, especially during the final prehistoric period.

The main cultural-historical process of the last two periods therefore seems to have been the progressive fusion of Zapotec and Mixtec cultural variants in the Valley of Oaxaca. The period of maximum differentiation between Mixtec and Zapotec cultures seems to have been IIIb. Even in that period some "Mixtec" traits show up in the ceramics, however. Therefore it seems reasonable to deal here with Monte Alban IV and V as they were probably originally intended to be treated, as purely chronological blocks of time against which we can draw the major features of prehistoric events. In these terms we can define Monte Alban IV as A.D. 700 to 1000 and Monte Alban V as A.D. 1000 to 1521, the date of the Spanish Conquest. I have adjusted the Monte Alban IV and V dates to take account of Blanton and Kowalewski's latest published estimates (1981).

Stratigraphic evidence from Yagul and Mitla developed by Bernal (1965b) indicates that period V can be subdivided. The earliest phase is characterized at Mitla by the appearance of stone mosaic decoration and Fine Gray pottery in tombs. Monte Alban's period V tombs, except for Tomb 7 and its great treasure, date to this earliest phase. The dating of this phase is then A.D. 1000 to 1400. The later phase in period V is represented by Mixtec polychrome pottery and the latest palaces at Mitla and Yagul, as distinguished by their room plans. Zaachila Tombs 1 and 2 and Monte Alban Tomb 7 date from this period. The second phase started about A.D. 1400 and ended in 1521.

During Late Postclassic times, Mixtec penetration of the Central Valley reached its maximum and then receded under a Zapotec reassertion. Apparently the Mixtec had practical political control of most of the communities of the valley at one point. According to Bernal's survey data, this occupation may have constituted as much as 75 percent of the two hundred sites in his sample. However, by the time of the Spanish Conquest in November 1521, the Tlacolula and Zaachila arms of the valley were under partial Zapotec control, and Bernal's conclusions may be biased by factors discussed at the beginning of this section. This comeback was consolidated and expanded by the Zapotec in the early colonial period. Cuilapan in the western valley represented the major Mixtec outpost in 1521, perhaps having as many as 13,500 inhabitants. In 1519 the total valley population was a maximum of 52,000 according to Blanton and Kowalewski's estimates (1981). This is much less than former rough estimates, which were about ten times as great. Population was also widely dispersed throughout innumerable (at least 867) communities, most of which were hamlet sized. As in the Basin of Mexico, Zapotec and Mixtec communities were organized into tributary networks typical of the Late Postclassic city and regional

states. For example, Macuilxochitl was tributary to Zaachila. Thereby, a loose political control was exercised by Zaachila (originally named Teozapotlan) over the continually bickering communities. Valley towns were often multiethnic, having barrios of Mixtec in Zapotec areas and vice versa.

Major centers of Monte Alban V (or the Late Postclassic period) were fortified or had fortified refuges. Mitla and Yagul are the best known. At Yagul an extensive palace complex has been excavated, with six patios very similar in design to those of nearby Mitla. A formal fortress was built on top of the mesa. A large and impressive ball court was located near the palaces. Several T-shaped major tombs have been found at Yagul that are dissimilar to the rectangular tombs at Monte Alban. Again, similarities to structures at Mitla may be noted. For example, the door to the burial chamber of Yagul Tomb 30 is closed by a stone slab that is carved with the same “running-fret” motif so common in the Mitla palaces. Bernal points out some nearly identical plans in palace groups at the two sites. Yagul was apparently occupied at the time of the Spanish Conquest, and its population was moved to Tlacolula, where their descendants still live.

Mitla’s period V aspect is that of a town built near a river, with a nearby fortress on a defensible mesa. Work by K. V. Flannery’s group (Flannery and Marcus 1983) indicates that the town was 1 to 2 square kilometers (0.4 to 0.8 square miles), with a sustaining area of about 20 square kilometers (7.7 square miles). The latter includes dry-land terracing of the hillside up to the 1,800-meter (5,900-foot) line. The major civic construction known from period V is represented by the three large and famous palace groups so often visited today as well as by the Adobe Group of palaces. These palace groups consist of rectangular buildings arranged around the four sides of spacious patios. The buildings themselves emphasize the horizontal, with their facades broken by mosaic decorated panels. The interior upper walls are dizzyingly covered with continuous and repetitious frets of various sorts: running, interlocking, and stepped. Bernal suggests that these and other decorative motifs indicate a fusion of Zapotec and Mixtec cultural ideas.

Fragments of extraordinarily fine murals are still to be seen in the Church Group at Mitla. In images, techniques, and coloration these are quite close to the Codex Borgia, as pointed out by the great scholar Eduard Seler (1904; see also illustrations in Miller 1988). Personified versions of the planet Venus and of the sun are to be found as principal themes. Huge monolithic columns supported the roof in a palace today called the Hall of the Columns. Lintels are massive, and stones of the same size supported the roofs of tombs that lie beneath the plaza in front the palaces. Father Burgoa, a seventeenth-century priest of Zaachila, records that these chambers were the traditional burial places for the priests at Mitla and that they smelled abominably (Paddock 1966c). A mesa 2 kilometers (1.2 miles)

distant was fortified with massive walls that closed off the gaps in the naturally rugged terrain.

Mitla held a religious primacy over other Zapotec communities and was apparently a center for the worship of a certain Coqui Bezelay and Xonaxi Quecuya (Lord and Mistress of the Underworld). Spores characterizes Valley of Zapotec religion in the early sixteenth century as using stone and wooden idols and requiring a trained priesthood, with ritual sacrifices of dogs, birds, and human beings. Liturgical matters included blood offerings from body parts as well as fasting, penance, feasting, intoxication, and ritual cannibalism. This religious complex involved the underworld as the place of death and of ancestors. In keeping with the religious focus of Mitla, a priest, rather than the usual local lord, ruled the center (Spores 1965).

Zaachila, or Teozapotlan, is located at the entrance to the arm of the valley of the same name. Until recently the site was little known due to the incredible hostility of the inhabitants toward outsiders in general and archaeologists in particular, whom they had run out of town twice in the past. The rather extraordinary finds of Mexican archaeologists Roberto Gallegos (1962) and Jorge Acosta (1972) have begun to fill this void, albeit under the unusual circumstances of military protection. The ancient site is evidently extensive but is partly covered by the modern town as at Mitla. Major architecture, which is located on natural and man-made elevations, consists of patio groups of the usual sort. A ball court may be included in the site. All of the visible material is evidently of period V. Mound B, the largest at the site, is high enough to enable one to see Monte Alban 15 kilometers (9.3 miles) to the north-northeast. This complex structure consists of several terraces leading to at least four elevated patios. Elevation would give defensive advantages.

Mound A is the location of the two tombs that have been the focus of most of the work at the site. It is lower than adjacent Mound B, but still elevated some 9 to 12 meters (30 to 40 feet) above ground level. A sunken patio on the top of Mound A is surrounded by the usual set of stone and adobe rooms. Tombs 1 and 2 are located under the north building. Both tombs have antechambers. Tomb 1 contained one principal individual and nine others crumpled along the walls. Eighty pieces of some of the most magnificent pottery ever found in Mesoamerica, the famous Mixtec polychrome with its glossy, lacquerlike finish in brilliant colors, were found in the antechamber. The individual pieces are extraordinary. A small blue hummingbird perches on the edge of a gloriously colored drinking cup. A howling coyote's head forms the mouth of a pitcher, with the spout being the animal's red tongue. Turquoise mosaic disks and masks and gold rings were included with the offerings.

On the walls of the tomb are modeled stucco figures of humans with calendrical names attached to them by a line, codex-style: 5 Flower and 9

Flower. Before each of these figures marches the modeled figure of the death god, Mictlantecuhtli, or Coqui Bezelao. It is possible that both of these individuals are mentioned in the Mixtec codices as rulers in the dynasty of Mixtec Yanhuitlan. By a complex and tortuous genealogical argument, Alfonso Caso (1966a) thought that the person buried in Tomb 1 was probably 8 Deer "Fire Serpent," a ruler known to have been born about A.D. 1400. 5 Flower and 9 Flower were ancestral figures to 8 Deer "Fire Serpent." However, his argument depends on the assumption of a recording mistake in one of the codices.

Tomb 2 contained another sumptuous burial, with twelve persons in the latest interment, the prior occupants' bones having been carefully stored in the niches of the tomb. Mixtec gray ware, a well-made plain pottery, was used for the ceramic offerings, but this plainness was offset by the occurrence of some superb pieces of gold work and carved bones. In quality, these items are quite the equals of any found elsewhere.

Two other tombs have been found at Zaachila with less spectacular offerings but which nonetheless provide information. These were located in a small mound under the ruins of a colonial Catholic chapel. It is known that early sixteenth-century chapels were often placed on the razed sites of former native shrines. The two tombs date from Monte Alban V and contained 124 pieces of pottery, some of it very fine indeed. Several nontomb burials were found, one with an exceptional combined gold and turquoise-jade disk. The gold was beaten thinner than tissue paper and is exquisitely decorated with Mixtec codical-style seated human figures. Relying on the documentary evidence, which states that Zaachila was the Zapotec political capital but fell to the Mixtec late in the prehistoric period, it seems probable that persons in these tombs were Mixtec. However, even if they were Zapotec, marital connections to Mixtec elite families would explain Mixtec luxury goods in the tombs and burials.

Monte Alban Tomb 7 is famous as a great treasure house of Mixtec art. As interpreted here, the evidence is equally good for considering the occupant Zapotec as Mixtec. However, considering the documentary evidence that the Mixtec controlled the nearby zones in the sixteenth century, the tilt now seems to be toward its being a Mixtec tomb.

The tomb is located in a small architectural group of the usual sort with stone buildings facing inward upon the courtyard. The tomb entrance is in the patio, and the burial chamber is under one of the structures. The occupants of Tomb 7 were literally mixed up, so the count of individuals is seven to nine adult males with the remains of two women and one infant thrown in for good measure. The discrepancies and uncertainties in numbers can be explained by the possibility of body parts of various individuals having been included as part of the funerary offerings. The principal occupant was a human monster with a cerebral tumor. Caso

suggests that in life he might thus have represented an incarnation of the god Xolotl, god of monsters. A skull among the parts had a turquoise overlay and a flint knife in the nasal opening—a symbol of Tezcatlipoca. The offerings were extraordinary, comprehending 337 separate items of gold, silver, copper, carved bone, jade, and other materials. The quality of the jewelry is notable. Ten gold pectorals were in the tomb, one with a calendrical date. Another is a composite example, with sections showing a ball game in progress, a sun symbol, and other scenes; it was hung with delicate golden rattles. Rings, brooches, fan handles (one of jade), a gold diadem with a gold feather, earplugs, bracelets, and a copper axe were included in the inventory.

The carved human bones, which are extremely complex and rich in iconography, are nearly identical to those found in Zaachila Tomb 2. The gold objects also show great similarity to Zaachila Tomb 1 material. So complex is the tomb and its implications that Caso needed four hundred pages in a sumptuous volume (1969) to completely describe and analyze it. The implications of wealth, craftsmanship, and economic networks are all enormous. The legendary skills of the Mixtec as artificers of the sixteenth century are confirmed. Brockington (pers. comm.) points out that Mixtec artisans were imported to Tenochtitlan in Aztec times to practice their skills in the great capital (fig. 8-13).

The Zapotec had spread and expanded into the coastal plain of Oaxaca and into the Isthmus of Tehuantepec during the late prehistoric period. In point of fact, they may have been refugees. The *Relación de Cuilapa* says, “Finally these [Mixtecs] had a war with the people of Teozapotlan, who, recognizing that they were at a disadvantage fled to Tehuantepec” (after Paddock, 1966a, 375). Spores (1965) goes so far as to say that the major center of Zapotec political power may have shifted completely away from Zaachila to the Tehuantepec center of Guiengola a few years before the Spanish Conquest.

Guiengola is little known, having only been incompletely investigated by Seler in 1896 (Seler 1960, 2:184–99) and remapped later by Peterson and MacDougall (1974). It is a large and imposing fortress located on a ridge. Paddock (1966b) comments that the site has the typical Zapotec arrangement of major buildings around patios. However, David Potter (pers. comm. 1976) points out that the style of the buildings at Guiengola is very different from that at Lambityeco. There is also a ball court and a curious and complex palace area, and the rugged hillside is ringed with two massive walls, evidently for defensive purposes. The pottery on the site is all Late Postclassic. We know from historical accounts that in about A.D. 1497 Guiengola was the location of one of the most resounding defeats suffered by the Aztec in their expansion of empire. For once, the Zapotec and Mixtec patched things up and joined together in resisting the common



Fig. 8–13. Gold jewelry made by Mixtec artisans of the fifteenth century. Renowned for their craftsmanship in gold, a group of these specialists resided at Aztec Tenochtitlan.

enemy. A Zapotec ruler, Cocijoeza, led the resistance during the four-year siege and then turned on the Mixtecs. Brockington (pers. comm. 1976) notes that the name means simply “rain god worshipper” and therefore could be a title carried by any or many rulers. Paddock (pers. comm. 1976) notes that a real person, despite these questions about his title, occupied the throne in the early sixteenth century.

The suggested Zapotec comeback after Mixtec aggression may have been mainly accomplished after the Spanish Conquest. The Zapotec invited the Spaniards into Oaxaca to help them against the Mixtec, seemingly an act of desperation. In any case the Spaniards and their allies came and conquered both Mixtec and Zapotec in a one-month campaign in 1521.

The Zapotec and Mixtec (both of their original names roughly mean “cloud people”) survive today. They have suffered the trauma of the conquest, the worst blows of the colonial period, a steady erosion of their economic and biological base, and the continuing assault of the modern world on their cultural traditions. In their fierce independence and cultural persistence, they are somewhat like the Highland Maya and the Zuni of the southwestern United States.

The Mixtec

Spores (1969, 1972) has commented on the diversity of cultural groups that constitute the Mixtec language family. These regional variants are usually grouped into the Mixteca Alta (Highland), Mixteca Baja (Lowland), and Mixteca de la Costa (Coastal and Coastal Range). Brockington’s work in the cultural fracture zone, which is the Oaxacan coast, will be treated separately; it includes Mixtecan groups but probably also archaeological remains from other linguistic groups. The only regional variants of which we know anything of archaeological substance at present are those of Coixtlahuaca and the Nochixtlan Valley (Bernal 1949). Spores’s Nochixtlan sequence is as follows:

<i>Phases</i>	<i>Dates</i>
Convento	A.D. 1520–35 to 1820
Natividad	A.D. 1000 to 1520–35
Las Flores	A.D. 500 to 1000
Ramos	200 B.C. to A.D. 500
Cruz	1300 to 200 B.C.

In terms of many of the regional sequences of Mesoamerica, these are fairly long periods of time, but the sequence is continuous and shows considerable internal development. For these reasons and others that will become clear, we will review the sequence from beginning to end.

Preclassic or Formative: Cruz Phase

Nochixtlan developed a fairly standard highland Formative culture during the Cruz phase, one which was mainly village oriented but with contacts both inside and outside the region. Ceramics reflect ties with adjacent valleys and farther away, as do its ubiquitous figurines. Housing within the small communities evolved from houses with packed-earth floors to some with plastered floors. Block adobe walls were favored from the earliest times. One probable elite residence was found at Inityu, and an immense platform from a nearby site indicates that the general Mesoamerican Formative trends towards social complexity and associated civic architecture were in medias res in the Nochixtlan Valley. Parallels with the Central Valley of Oaxaca are striking.

Early Classic: Ramos Phase

The first appearance of an urban center takes place about 200 B.C. at Yucuita. Several hundred structures, including ten major civic groups, are concentrated in an area of 1 to 1.5 square kilometers (0.4 to 1.2 square miles). Spores thinks that Yucuita probably dominated the whole valley. There was considerably more to dominate than in the Formative period. Population had doubled (twelve thousand to fourteen thousand people), and communities had grown both in size and in complexity. Some ten towns and at least twenty hamlet-type sites were in the valley, most of them clustering about the developing urban center.

Yucuita seems to have been internally specialized, with a number of different kinds of craft and social groups living together. Yucuita probably had only about seven thousand people, but these were supplemented by people in the subordinate communities, themselves specialized. Spores feels that the consistency of pattern between the settlement complexes of historic times and of the Ramos phase allows him to infer that the pattern of the Mixtec petty state ruled by an aristocratic family was already in existence. This inference is reinforced by the fact that the sequence shows no significant breaks and indicates that the same cultural tradition is involved throughout at least two thousand years. The latter is reflected in the gradually changing gray wares, which lasted from Cruz up to Convento times.

Late Classic: Las Flores Phase

Total valley population reached an estimated thirty thousand during the Las Flores phase. Less desirable lands were developed, particularly those higher up-slope, probably as a result of population pressures. The region was again dominated by a single large center, this time located in a defensible position on one of the highest mountains in the valley. This capital, Yucuñudahui, covered about 2 square kilometers (0.8 square miles) and was a planned urban area. Sculptured monuments have been found, with a system of writing similar to that in use at Monte Alban in period III. The center existed within a context of an increased number of communities. The larger centers were composed of a number of palace complexes surrounded by humble housing of the one- or two-room type. The smaller centers had one or two palaces surrounded by many small and inferior houses. Spores finds in this pattern great similarity to the settlement pattern that accompanied the distinctive Late Postclassic social organization. Ruling families in the latter days occupied the main centers, while outlying settlements were administered by a network of loyal nobility. All nobility maintained two or more homes, one in the administered communities and one in the capital. There, the historically known social organization would fit the Las Flores settlement pattern quite well. Nobility would have been supported by the service and tribute system well known from the Late

Postclassic period. It is also noteworthy that the same Late Classic shift from open to defensible locations that took place in the Guatemalan highlands also occurred here.

Early and Late Postclassic: Natividad Phase

The Nochixtlan Valley has relatively sparse evidence of the famous Mixtec polychrome during the Natividad, a late prehistoric phase, although Coixtlahuaca has it in abundance. On the other hand a diagnostic red-on-cream type is exceedingly common. We must, therefore, look elsewhere for the origin of the Mixtec polychrome tradition, perhaps to another valley such as Coixtlahuaca or to the Mixteca de la Costa area. Paddock (1966b) suggests that Maya polychrome tradition may be the ultimate origin. Gray pottery, of the kind that appeared in the Central Valley of Oaxaca, continued its gentle but persistent modulation throughout the period.

The Nochixtlan Valley population reached its maximum during this long phase. One hundred and fifty-nine Natividad sites have been found thus far, and an estimated fifty thousand people occupied them. An intensive form of agriculture based on terracing (*lamabordo*) of the upper slopes was developed. The even distribution of valley population of the preceding period shifted to a pattern of concentration in the northern end of the valley, around Yanhuitlan. Spores correlates this shift with the rise of the kingdom of Yanhuitlan, although it was only the largest of seven kingdoms in the valley. Most population was located in indefensible positions, and therefore it seems that this phase was a time of peace and tranquillity. According to the codices and *relaciones*, the Yanhuitlan petty state was fairly stable for the last four hundred or five hundred years before the Spanish Conquest. However, there were outside pressures on the valley, among them aggressive moves by neighboring Mixtec states, especially the coastal kingdom-empire of Tututepec. Late in the period, the major aggressor was the Culhua-Mexica (or Aztec) empire, which rather easily overran the area in A.D. 1486 and 1506. To the internally generated stresses of growing population and growing elite classes, then, were added the external stresses of tribute demands from outside political systems.

It is clear that the Nochixtlan Valley had less demographic potential than that of the Basin of Mexico, simply on account of lesser size. In addition, its subsistence base was poorer. The city-states of the basin averaged about fifty thousand per unit, whereas that figure was shared among seven kingdoms in the Nochixtlan area. Spores thinks that eventually the stresses would have led to conflict within the valley in spite of the stability afforded by elite alliances and economic interdependence. For other parts of the Mixtec area, the main period of upset and conquest was in the eleventh and twelfth centuries. Perhaps these regions had still less demographic potential than Nochixtlan and reached their limits more rapidly, triggering predatory competition.

Ethnohistoric Yanhuitlan

Using documents from the sixteenth century, Spores has reconstructed late prehistoric Mixtec society in the region of Yanhuitlan (1967; also Spores and Flannery 1983). Social organization was based on a four-class system. At the top was the ruling family with its privileged relatives. They were supported by a tribute system yielding goods and services. A second group was made up of supporting nobility who were the civil-servant group for the small kingdom. They were also entitled to support from the tribute system. Together with the ruling family, the nobility made up a caste. A third class was made up of commoners, who carried a large part of the burden of the tribute system. A special status group may have been formed by merchants. Tribute included items not available in the valley, such as "Guatemala (quetzal) feathers," and therefore these traders ranged fairly far. The lowest class, made up of tenant farmers, servants, and slaves, was smaller than the commoner class. Kinship ties were important at all levels of society, although not beyond the community except in the case of the elite. The latter maintained their caste exclusiveness by careful recording of genealogies, which appear in the pre-Conquest codices and in the colonial documents as well. This system was in use all over the Mixteca, of which the Valley of Nochixtlan was only a part and of which the kingdom of Yanhuitlan was only one among many. It is to these fascinating prehistoric picture books that we now turn.

The Mixtec Codices: Content, Decipherment, and Characteristics

There is only one topical group of pre-Columbian manuscripts from the Mixteca area. P. Anawalt (1981) has demonstrated by analysis of the costumes depicted that the "Borgia group" is a mixed collection of documents, three from Puebla and two from the Gulf Coast. They are no longer to be considered as Mixtec and will be referred to elsewhere. The group of pre-Hispanic documents that most interests us here is genealogical-historical in content. It consists of eight surviving manuscripts. Burgoa tells us that the painted books of the Mixtecs give us the day and year signs, name and god-hieroglyphs, marriages, ceremonies, sacrifices, and military events (M. E. Smith 1973). A few codices—the Codex Vienna, for example—combine information from both categories.

The major decipherment of the manuscripts was done over a fifty-year period. Zelia Nuttall in 1902 first suggested that the Codex Nuttall (Nuttall 1975) contained historical information (fig. 8-14). James Cooper Clark in 1912 put together the story of the great Mixtec conqueror 8 Deer "Tiger Claw," which though inaccurate in many respects was a major step forward. Interest in the manuscripts then lapsed except for commentary by R. C. E. Long (1926) and Herbert Spinden (1935). The latter defined the genealogical-historical category. The great breakthrough came in 1949,

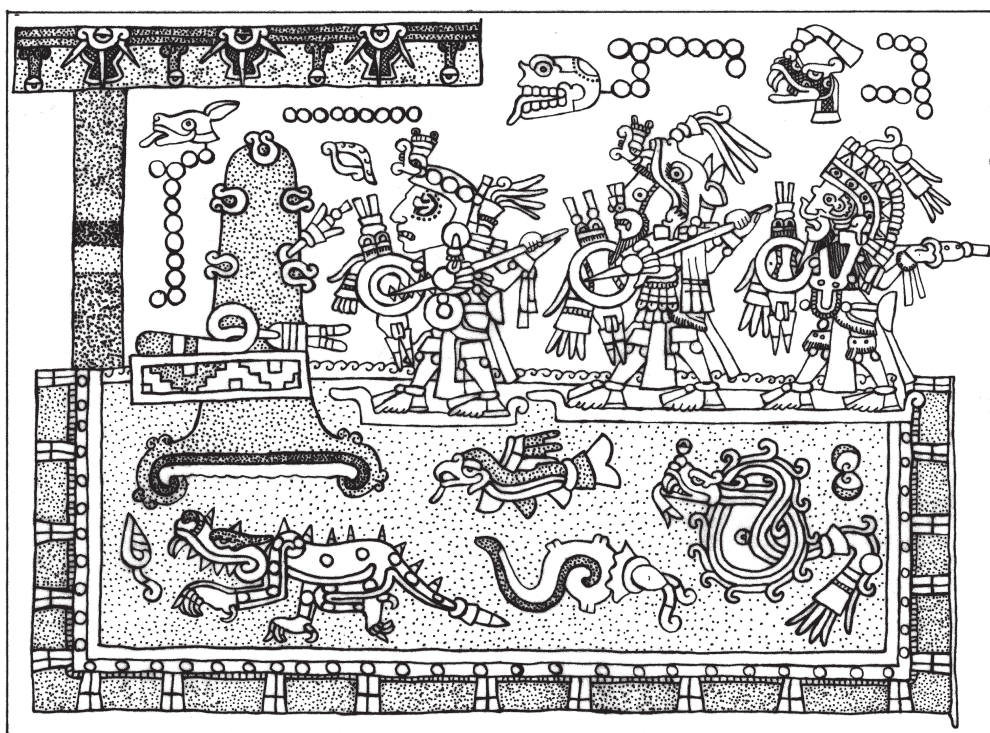


Fig. 8-14. Codex Nuttall, from the highland Mixtec area. Page 75 from this history and genealogical record shows the attack on an island city by Mixtec warriors in canoes. An alligator swims in the water, possibly indicating a location in the lowlands.

with the publication of “El Mapa de Teozacoalco” by Caso. In that study, Caso dealt with a pictorial document that shows the genealogies of the Mixtec ruling families of Tilantongo and Teozacoalco. The record was carried back into the prehistoric past and overlapped with pre-Columbian manuscripts such as the Codex Nuttall. Further, “El Mapa de Teozacoalco” carried European dates corresponding to the Mixtec hieroglyphs as well as a commentary in Roman script. Using these keys, Caso proceeded to a series of brilliant commentaries on the various codices of the genealogical-historical group. With this extraordinary work and those of his colleagues, we now have elite-class histories available for a great part of the Mixtec area running continuously from A.D. 692(?) to 1642. The colonial documents overlap, and we are thus able to carry the record up to modern times in some cases.

A group of revisionist scholars has made the claim to having accomplished a drastic overhaul of Caso’s chronology and therefore his interpretations (Troike 1978). However, nothing substantial has been heard since the

initial announcement of this imminent revelation. Therefore, it will be assumed here that the majority of Caso's work is sound and that his interpretations stand substantially as published.

The following is a summary of some of the most interesting information produced by Caso and others. We are able to construct (at times) amazingly detailed historical records for regions which are as yet archaeologically unknown. Our perspective, therefore, is more than that which is given us by the still small archaeological sample. The whole picture is still incomplete, but the basic outlines of historical events comprehend most of the Mixteca. Social structural features are contained in great detail in the colonial documents that supplement and continue the prehistoric records. Thus we can infer these same features onto the framework provided by the prehistoric manuscripts and archaeology.

Most of the codices are painted in bright colors on deer or other animal skin sized with plaster coating. The codices are screen-folds and usually are to be read in a zigzag fashion. Reading is helped by the use of red lines that divide the codices into registers, and one usually reads until a break in the red line is found and then shifts up or down to the next register. Multiple colors are used, and the superficial appearance is like that of our Sunday comics. However, the resemblance ends with the surface stylistic features. Several codices are extremely pleasing in an aesthetic sense and, indeed, Burgoa says that the nobility also used them as room decorations.

Walter Krickeberg said about the codices that "Gods and mythical figures continually intervene in human destiny and the beginning of a genealogy in particular always depicts a 'Prologue in Heaven,' and presents the primal ancestors emerging from the centre of the earth and out of the trees" (1956, 277). Burgoa favored the theory that the elite class had come from the northwest and over the mountains. He also mentioned two other theories current in the seventeenth century. One story had the Mixtec settlers coming from the West. Another myth was that the Mixtec came from trees on a riverbank near the town of Apoala. In the *Codex Bodley* (Caso 1960), an extraordinary scene early in the manuscript appears to show the birth of an ancestral female of the Tilantongo rulers from the Apoala trees. This origin myth, however, seems only to apply to the aristocracy. Commoners had come from the center of the earth.

All persons shown in the codices are named after their birthdays in the sacred-almanac system. Thus the ancestral female shown in the *Codex Bodley* had the name 1 Death. However, to distinguish among all persons born on the same day, at the age of seven each was given a nickname. Thus we have the famous conqueror 8 Deer "Tiger Claw" to distinguish between him and later rulers, 8 Deer "Quetzal Cobweb" and 8 Deer "Fire Serpent."

Each small city-state kept such records, usually in the temple or in the palace buildings. These constituted the validation of the right to rule, the

patrimony and the rights and privileges that went with the position, and a record of how things went during a reign. Only a few of the presumed many documents have survived to this day, most in European libraries and museums. Fortunately for us, the historical circumstances of the Mixteca were such that at one point most of the records overlapped through the activities of 8 Deer “Tiger Claw.”

According to the amalgamated story pieced together by Caso, 8 Deer was born in A.D. 1011 to the ruler of Tilantongo, whose name was 5 Alligator “Rain-Sun” (1966b). Tilantongo dominated an area in the northern Mixteca Alta. There is a possibility that this 5 Alligator may have been involved in the military incursion into the Maya area in the tenth century. A certain 5 Alligator is prominent on the Fine Orange pottery found at Altar de Sacrificios. However, he may also have been another, previous 5 Alligator named in the codices or not a Mixtec at all (D. Kelley, pers. comm. 1976). In any case 5 Alligator was a fairly successful militarist. He died in 1030, leaving his son the throne at the age of nineteen. It may be that a regent acted for 8 Deer in the first few years of his reign. Relatively soon, however, 8 Deer “Tiger Claw” showed outstanding ability and began to put together a political tribute–alliance system that was more than that of the standard Mixtec city-state. He may well have been helped by also inheriting the throne of the most important south coast town, Tututepec. In that case 8 Deer’s story is a little less fabulous and more like that of the self-made millionaire who bragged about having arrived in town with only the clothes on his back and a paper bag. Finally, when someone asked what he had had in the paper bag, he admitted that it had contained fifty thousand dollars.

Be that as it may, 8 Deer, with or without striking advantages, came the closest to establishing a Mixtec empire of any Mixtec ruler in prehistory. He conquered various places and allied himself to others by judicious and multiple marriages. As an example of the latter, 8 Deer is recorded in the Codex Bodley as having married 13 Serpent “Serpent of Flowers” in 1051, 6 Eagle in 1053, 11 Serpent in 1060, and two other women. One of the great events in 8 Deer’s life was the incident in which he was requested by the ruler of Tula, 4 Tiger, to capture another ruler. With the help of his half-brother, 8 Deer did as requested in 1045 and drove the captive to Tula. It is not known if this was the “Great Tula” or another place named after it. In any case 8 Deer was rewarded by having his nose perforated and a jade nose plug inserted, signifying his elevation to the rank of *teuctli* (lord). At the age of sixty-two, 8 Deer finally went to war once too often and attacked the town of some of his in-laws, who resisted, took 8 Deer prisoner, and promptly sacrificed him, sending him to join the gods. Still, he was a great man and was buried with proper ceremony eleven days after his death. He is shown in the Codex Bodley as seated in his mummy bundle in a stone chamber with incense pots smoking around him.

The last few pages of the Codex Vienna are lined off in red but not filled in, the last entry occurring about 1397. This codex's records were cut short by the Aztec conquest of the area. Apparently the codex was taken back to Tenochtitlan as part of the loot. Many other interesting histories are set down in the codices: for example, that of the formidable woman ruler, 6 Monkey, who, having been insulted by two male rulers, promptly conquered and sacrificed them. Yanhuitlan no doubt had such pre-Columbian records, but they have not survived, except in colonial transcriptions.

A number of problems remain in the decipherment of the Mixtec pictorial books, one of the most crucial being that of identifying the places named in the codices with archaeological sites or present-day communities. M. E. Smith has made great headway in this area. Another intriguing possibility is that lords of other ethnic groups (Zapotec, Chatino, Mixe, and so on) are mentioned in the Mixtec codices. Caso has identified some Tlaxcalan lords in the Codex Nuttall. Overlap of dynastic records between the Mixtec and Maya has already been mentioned as a possibility. Caso, unfortunately, is no longer with us, but his work goes on.

The Spaniards built one of their principal colonial churches at Yanhuitlan in the sixteenth century; it was a handsome example of a "fortress" church. They also retained much of the old Mixtec social order as an administrative and exploitative apparatus. It was not until the seventeenth century that the system began to break down under the twin assaults of a drastic population loss which, in turn, was linked to a severe economic depression. By 1600 population in the valley had been reduced by all causes to about ten thousand, an 80 percent loss. The tribute system sustaining the old nobility could no longer be supported along with that imposed by the Spanish colonial empire. The surviving members of the Yanhuitlan ruling family sold off the last of their inherited lands in the mid-nineteenth century (Caso 1966a).

The Coast of Oaxaca and the Isthmus of Tehuantepec

At the time of the Spanish Conquest both the coast of Oaxaca and the Isthmus of Tehuantepec were exceedingly complex areas ethnically, linguistically, and culturally. From Brockington's survey of the coast and Matthew Wallrath's work in the isthmus, it appears that this fractionation may have been the case since at least the end of the Formative period and perhaps before (Brockington, Jorin, and Long 1974; Brockington and Long 1974; Wallrath 1967).

On the Oaxaca coast, Spores (1965) notes the presence in the sixteenth century of the Mixteca de la Costa, Chatino, Southern Zapotec, Nahuatl, and Chontal (Tequistlateco) groups. Various origin myths, some recorded and others of oral tradition, mention Nahuatl speakers coming down to the coast from Tula by way of Jalisco. Other traditions bring in Chontal from Tabasco.

Brockington's survey and excavations, especially at Sipolite near Puerto Angel, show a long and complex occupation of the coast from Late Formative times to the present. Late Formative ceramics are vaguely similar to those of Monte Alban I and II. A considerable body of stone sculpture may go with this period's development, with the stone stelae showing some resemblances to the material from the nearby south coast of Guatemala. Some small civic centers were found, consisting of platforms grouped around courtyards. This seems reminiscent of the West Mexican pattern. Long notes that the relatively undisturbed development of coastal ceramics is upset in the Late Classic and Early Postclassic with the appearance of various Fine Orange, Fine Gray, and Fine Black wares. These are linked to the ceramics of the Tabasco Coast across the isthmus, and Long suggests that they represent an intrusion of Maya people from that zone. Long also notes the variability of the local sequences from the several sites. In the Late Postclassic period some sites have Mixtec pottery, indicating Mixtec trade or presence. This correlates with the fact that Tututepec is known from documents to have made repeated attempts to dominate the coast and was in perennial conflict with the coastal-range Zapotec town of Coatlan. Thus, the shattered nature of the archaeological regions ties in with the documents, the linguistics, and the ethnographic picture in indicating a marginal but complex area that was continually changing hands or being penetrated by new cultural groups.

The Oaxaca coast continues to the east and becomes part of the plains of the Isthmus of Tehuantepec. In the sixteenth century Huave, Zapotec, Mixe, Zoque, and Nahuatl groups inhabited the Pacific side of the isthmus. The only major archaeological work so far has been done by Wallrath (1967), who established a sequence which runs from 850 B.C. to the present. The earliest known settlements were centered on the lagoons and are about contemporary with Chiapa II (Dili) at Chiapa de Corzo. However, as with most of the rest of the sequence, the ceramics show remarkable regionality and do not closely relate to any other known cultural area. Platform building did not begin until about 100 B.C., appearing in small sites. Presumably, we have a long period of village-centered society with small civic architecture through most of the sequence. The four major Mixteca-Puebla horizon sites include the Guiengola fortress, which has already been discussed in connection with the Zapotec. Again, the reconstruction with the data at hand is one of a marginal area largely out of the major cultural-historical action for most of the time and pushed around by events beyond its control in the Late Postclassic period.

The Mixteca-Puebla Style Horizon

"One of the most noteworthy things in their market was the pottery, of a thousand different designs and colors" (López de Gómara 1964, 131).

Thus López de Gómara describes the famed Cholula polychrome ceramics, which were distributed all over central Mexico through a trade and religious network. This style seems to have evolved principally in the Cholula (Puebla) area, beginning at least by A.D. 900, but it also seems to have absorbed influences from, and exerted influence on, Mixteca pottery styles. The final result was the broadly connected set of similar style groups spread over Mesoamerica at the time of Spanish contact. Regional variants of the ceramic expression of the style include the Mixtec polychrome of Monte Alban V period, Isla de Sacrificios V polychrome, Cholulteca III “poli-croma firme,” and, in the Basin of Mexico, Chalco polychrome pottery. The Borgia group of codices are included in the style by H. B. Nicholson (1960), who argues that the Codex Borgia itself was painted in Cholula. Anawalt (1981) has demonstrated that three of the Borgia group of codices come from the Puebla zone. This cluster of three manuscripts is mainly ritual and calendrical in content. The gods are depicted, mythological events transpire, and the mysteries of the sacred almanac and yearly calendar are laid out. The Mitla palace murals show strong affinities to the ceramic and codical styles, as do the Tizatlan mural from Tlaxcala and the Santa Rita murals from Belize.

Nicholson has given the concept a definition that expresses G. C. Vaillant’s original idea. The style is extraordinarily precise in delineation of motifs. Numerous vivid colors are used and are symbolic themselves. Highly characteristic symbols include solar and lunar disks, water, fire, hearts, war symbols, the twenty *tonalpohualli* signs, serpents, jaguars, deer, and many others. The style is distributed from the Huasteca to the Maya Lowlands and possibly even into Central America.

Cholula’s position as an exceedingly important pilgrimage center during the Late Postclassic period would alone account for wide distribution. Cholula was the center for the worship of Quetzalcoatl (figs. 8-15, 8-16). Robertson, as noted before, has characterized the mural style expressed at Santa Rita as a sort of international style of the Late Postclassic period, and it is indeed, being a local variant of the Mixteca-Puebla horizon. The distribution is also a fairly good indicator of the efficiency and vigor of the late prehistoric Mesoamerican trade network along which passed many things not so distinctive as Mixteca-Puebla pottery. The style has no connection with any single ethnic or linguistic group.

Evolution of pottery that seems ancestral to the style at Cholula can be detected near the end of the Late Classic. However, the period of the developed style’s spread outside its heartland of southern Puebla and the northern Mixteca was probably between A.D. 1400 and 1520. Most centers outside the main area acquired the style either as trade wares or as a localized variant and can be dated thereby.

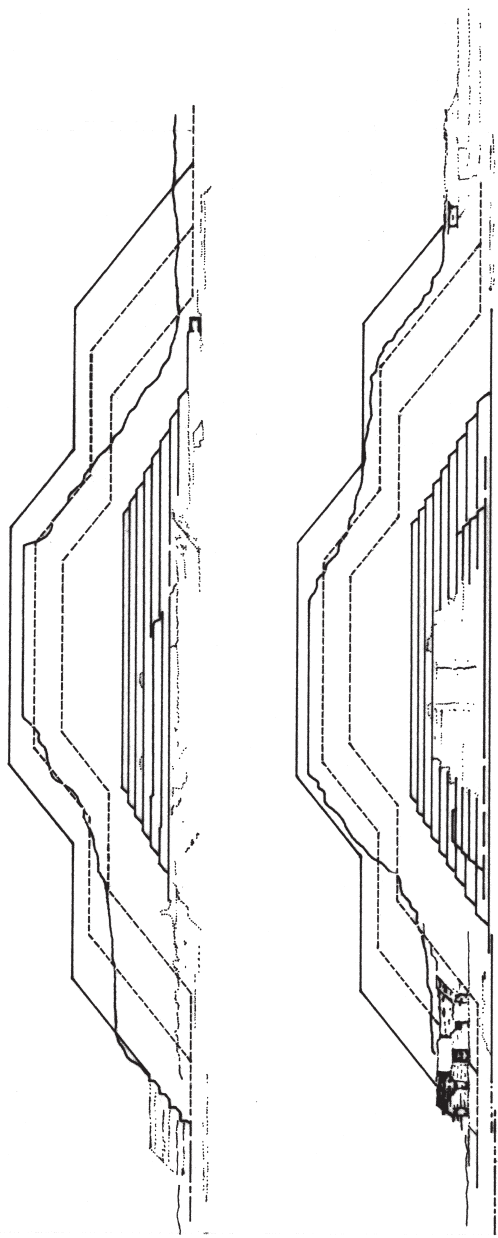


Fig. 8-15. Cholula, Puebla, Mexico. Cross-sections showing the incremental construction of the immense pyramid-platform of this pilgrimage city.



Fig. 8-16. View of an earlier, probably Epi-Classic platform at Cholula and the later, sixteenth-century (Late Postclassic) structure that today supports a colonial Spanish church.

Postclassic and Protohistoric Veracruz

The great Gulf Coast plain of Veracruz was inhabited by at least four major ethnic-linguistic groups at the time of the Spanish Conquest: historic Olmec (their name meaning “rubber people”), Totonac, Huastec, and Nahua groups. We have already seen the difficulties in attempting to equate archaeological cultures with such groups. However, if there is one grand trend in such matters in this area, it is that during the Postclassic period Totonac, Huastec, Uixtotin, and historic Olmec found themselves being compressed into ever smaller territories by expansion of Nahua groups from the highlands. Caution is therefore necessary in dealing with claims of ethnicity projected back through five hundred, one thousand, or fifteen hundred years. Within all coastal areas there was great variability, and multiethnic and multilingual towns are mentioned in historical documents as well as being reported ethnographically.

Withal, this cultural variability can be organized by means of the two major horizons within the area. The first of these horizons is that of the Toltec, falling between A.D. 1200 and 1450 and physically marked by the

appearance of Plumbate and the later styles of Fine Orange pottery as trade wares. The later horizon is that of the Culhua-Mexica (Aztec) empire, beginning about 1450 with the first Triple Alliance conquests and extending up to 1519, the date of arrival of Cortés at Cempoala on the central coast. The latest horizon is an areal variant of the Mixteca-Puebla horizon.

Southern Veracruz

Little is known from the historic Olmec area except from documents and ceramics. Needless to say, these Early and Late Postclassic peoples had no necessary connection with the "Olmec" of Early Formative times. Their territory occupied the northern entrance to the trade route across the Isthmus of Tehuantepec.

Early Postclassic pottery found at Tres Zapotes is highly regionalized as the Soncautla complex. This pottery is different in almost every respect from anything earlier at the site and includes large, hollow human-effigy figures. The pottery is related to other Early Postclassic pottery found at Isla de Sacrificios. However, the Fine Orange and Plumbate horizon markers are not found. Cremation burial appeared as a new means of disposal of the dead. Taken all together—discontinuity of ceramic tradition, cremation burials, stylistic linkages of the large clay figures and other traits—the situation suggests that this is possibly the time that the historically known Nahua speakers moved into the area. Very little is known of architecture or communities of the period, but apparently population was fairly dense, judging by the high frequency of Early Postclassic remains.

To the east, in the Chontalpa plain of Tabasco, Sanders (1963) excavated a small site named Sigero that may be typical of this period for both areas. The site is a small ceremonial center oriented around a central plaza. A main temple is located on the north edge of the plaza, a residential structure on the west, and a ball court to the east. Small house mounds are scattered over the surrounding countryside and probably represent the population served by the center. There is little evidence of larger centers, and the settlement pattern greatly reminds Sanders of the modern pattern of the area.

The Late Postclassic period is marked by pottery styles related to the general Mixteca-Puebla groups of pottery, associated in this area with Aztec trade and conquest. Brilliant polychromes appear in some zones of the south, but Basin of Mexico black-on-orange pottery is unknown. Settlement patterns and population sizes were probably the same as for the preceding period. Anawalt (1981) has identified two of the Borgia group of codices, the Fejervary-Mayer and the Laud, as from central eastern Veracruz. Both are ritual-ceremonial guides. It is not presently known from which centers they may have come.

Sixteenth-century documents indicate a high population of 150,000 to 200,000. Aztec control of the area was typically exercised through native

leaders, tax collectors, and garrisons. However, there was no overall Aztec control of the Chontalpa and southern Veracruz. At least one "province" (Coatzacoalcas) was semi-independent, although it paid tribute to Tenochtitlan. In other words the political situation matched the linguistic-political fragmentation. The zone was economically important and furnished rubber, cacao, cotton, and medicinal herbs to the surrounding area and to the central plateau. The people were famous as multilingual traders, and Malinche, Cortés's translator, came from this zone. Southern Veracruz and the Chontalpa rapidly became depopulated during the epidemics that followed the Spanish Conquest.

Central Veracruz: Early and Middle Postclassic Centers

The late architectural tradition developed at Tajín was carried on in a transformed version in the Middle Postclassic period (A.D. 1250 to 1450) of central Veracruz, according to José García Payón. This continuity is demonstrated in features such as jutting cornices, columns, friezes with high-relief frets, and communication tunnels. During this period, the Toltec possibly established themselves in the area. Alfonso Medellín-Zenil (1960) and García Payón (1971) attribute the well-preserved pyramid-temple at Teayo to the Toltec and say that it was built in A.D. 815. Both the date and ethnic identification seem dubious on the basis of the evidence. From Felipe Solís's recent study (1981) it is fairly clear that there are large overlaps with Aztec sculpture, especially the new body of material from the Great Temple in Mexico City. Moreover, it is clear that Teayo's temple was built in the style of central plateau architecture.

Elsewhere, at the Tuzapan fortress, there are ceramics that are quite close to Toltec-affiliated Mazapan red-and-orange pottery. Other Tuzapan pottery is related to plateau ceramic groups such as Coyotlatelco and Culhuacan black-on-orange wares. Much of this alien pottery is associated with fortified centers. Although there is some doubt about the Toltec identification of Teayo and Tuzapan occupations, then, there is little doubt that central plateau peoples were involved, probably militarily.

During the Early Postclassic period several regional and native styles of pottery were developed, including a particularly lively type of polychrome called Tres Picos I, which was decorated with dancing coyotes and monkeys. The Isla de Sacrificios site off the central coast apparently assumed its function as a sacred burial ground during this period, and a particular tradition of polychrome types found there are named after the site (Isla de Sacrificios I, II, III, and IV).

The intrusion of central plateau pottery and formal architectural styles into the sequences of the Veracruz plain may reflect the beginning of the intrusion of peoples from the overpopulated highlands. This trend certainly is historically known for the next period, when it intensified.

The Late Postclassic period in central Veracruz, which began about A.D. 1400, represents the certain emergence of the land of the Totonacs, or El Totonacapan. Major centers of Totonacapan included Quauhtochco, which was conquered by the Aztec between A.D. 1450 and 1472. The site has been excavated and is located in the Orizaba-Cordoba district. Although the ecological setting is semiarid, the site is on a river, as are all of the other major sites of the zone. Although Quauhtochco was founded in Late Formative times, the major period was clearly the latest, when it was under the domination of the Aztec Empire. The major temple of the center is much like those found in the Basin of Mexico. For example, the panels on the upper facades of the temple itself are studded with "nail-head" stones, probably representing stars. Many of the associated ceramics are related to the Aztec III black-on-orange wares and the "lacquer-finish" polychromes of Cholula. It is interesting that the Mixteca-Puebla polychromes at Quauhtochco were made from local clays. There are large braziers of coarse, heavy ceramic material that served as temple incense burners. Gods represented in the associated clay figurines include many central plateau deities, according to Medellín-Zenil.

Another fifteenth-century center in the same district is the fortress-cemetery of Comapan, built high on an escarpment. The fortifications, as in the case of Tepexi el Viejo in the Mixteca-Puebla area, consist of high stone-revetted terraces and free-standing walls. The site includes temples, residential palaces, tombs, shrines, and other architectonic complexities. Unfortunately, it has never been adequately explored or mapped. Historical documents indicate that the fortress goes back to the fourteenth century and that it was occupied by the historic Olmec. Mixteca-Puebla horizon polychrome pottery also occurs at Comapan.

Siemens has found firm evidence for late, intensive, wetland gardening similar to that of the Maya Lowlands in earlier periods (Siemens et al. 1988).

Cempoala and Quiabuitlan

The most densely inhabited regions of Totonacapan were dry and warm zones along major rivers that were used as irrigation sources. I. T. Kelly and A. Palerm (1952) have estimated that about 250,000 people lived in the province of Cempoala alone, with between 80,000 and 120,000 in the city. Cempoala was near the coast; the center of Jalapa, further inland, is estimated also to have had about 120,000 persons. Some smaller centers had respectable populations: Colipa, 24,000, and Papantla, 60,000. Although these estimates seem very high, we need more archaeological work before they can be modified.

Based on these density estimates, the descriptions left us by the Spaniards, and the archaeological remains, there is no doubt that Cempoala was a true urban center. The city lies in the bend of the Rio Grande de Actopan, which

has an interlaced network of wandering channels at this point. Highly productive irrigation agriculture supported the large populations. The site is laid out on the flat flood plain and arranged in at least nine major precincts. These zones are paved areas surrounded by walls that served both defense and flood-control purposes. High platforms elevate the main structures above flood level.

The major group at Cempoala includes five separate temples arranged around three sides of an enclosed courtyard of substantial size. This courtyard was the scene of the crucial battle between Cortés's and Narvaez's troops during the conquest of Mexico. Dance platforms are located in front of some of the temples. A round temple base indicates the presence of a structure dedicated to Quetzalcoatl-Ehecatl. At least ten T-shaped tombs are known from the main group. There is a total area of 120,000 square meters (1,292,000 square feet) covered by the formal architecture at Cempoala, with much more represented by domestic housing. It is known that a water system furnished fresh water to each house.

Ceramics associated with the latest period are closely related to late Cholula (Mixteca-Puebla) style pottery, and still other types continue the regional Isla de Sacrificios ceramic tradition.

Cempoala was the first major Mesoamerican city to be seen by the Spaniards. Cortés's expedition went there at the invitation of the Totonac leaders and was warmly received by a ruler whom they affectionately called "the Fat Cacique."

Quiahuiztlan, a smaller contemporary site, is located a short march away from Cempoala. Several major temples dominate the fortress center there. Its defense consists of location on a ridge which has been modified by high terrace walls. Quiahuiztlan also contains at least a dozen cemeteries of a special kind, consisting of small mausoleums in the form of miniature temples. Secondary burials are found in chambers in the base platforms, and small conduits often lead up to the temple-shrine above. Presumably they represent something paralleling the Maya practice of making sure that the distinguished dead were kept apprised of the latest events and could be appealed to for supernatural aid. At any rate only the important dead were buried in these small buildings, along with their funerary offerings of ceramics and jewelry. Medellín-Zenil (1960) says that animal sculptures are frequently found by the sides of the mausoleums and suggests that these represent the *tonales* ("animal souls") of the individuals buried inside. This belief in animal souls (tonalism) is ethnographically widespread in Mesoamerica, and presumably these cemeteries represent an origin of the belief in the archaeological past.

It was at Quiahuiztlan that Cortés first met representatives of the Aztec Empire. These were some very haughty *calpixque* (tax collectors) who

Table 8-1. Chronology of the Huasteca, 1400 B.C. to A.D. 1750

Time	Sierra de Tamaulipas	Southwest Sierra Madre
1750	Los Angeles	San Antonio
1300		San Lorenzo
900	La Salta	
500		Palmillas
A.D. 1	Eslabones	
B.C. 1	Laguna	La Florida
500		Mesa de guaje
1400		Guerra

SOURCE: MacNeish 1958.

demanded that the Spaniards be refused hospitality. Cortés arranged for their arrest, thereby initiating his first assault on the Aztec political system.

The Huasteca

The vast Huasteca area is one of extreme ecological complexity, even for Mesoamerica, and is united only loosely by certain cultural traits and by language. The Huasteca lies in northern Veracruz and southern Tamaulipas and includes both very mountainous and flood-plain topography. The Huastec speak a form of Maya which may have split from the rest of the Maya languages about 1500 B.C., according to lexico-statistics. However, aside from the linguistic affiliation, the Huastec followed their own cultural trajectory, which seems closer to that of the rest of Mexico than to their Maya relatives. One further handicap in understanding the Huastec area is that the area is poorly known, and the sample of data varies wildly in quality.

The earliest cultural development in the Huasteca has already been discussed in the section on the development of sedentary life and domestication of plants. The Tamaulipas caves and villages excavated by R. S. MacNeish have also yielded a series of phases that continue from when we left them, 1500 B.C., to about A.D. 1520 (MacNeish 1971), as shown in table 8-1.

Population growth accompanied by increasing food production based on domesticated plants provide the archaeological framework for this area from Middle Formative onward. The area also shows remarkable stabilization of cultural development at the village level. In other words the Huasteca was somehow arrested at the Late Formative level for most of its history. The major perturbations are in the direction of deevolution.

In more detail, the Mesa de Guaje phase represents a village-oriented society in which agricultural stability has been achieved, with about 40 percent of the food produced by cultivated plants. The following La Florida phase shows about the same subsistence proportions of wild to domesticated plant foods, but the numbers of communities and their nature changed significantly. MacNeish says that temple-oriented village groups are the normal pattern. During the Palmillas phase, shortly after the time of Christ, there was a further increase in the numbers of villages and people, and a maximum population was reached in the mountains of the Huasteca. Up to fourteen hundred house platforms have been found around a single temple, each presumably representing a household. The villages reached their most complex development with the addition of ball courts and possible water-storage facilities.

At this time (about A.D. 500) the area reached a degree of complexity equal to that used by other Mesoamerican peoples to launch themselves into the quantum jump to civilization. However, that jump did not happen, and the period after about A.D. 500 represents a drastic simplification of material culture and of the incipient civic centers. Possibly the economic basis was not firm enough. William Wagner and Fred Valdez (in press), in a recent examination of the Formative in the area, observe that late in the period most known villages depended heavily on hunting, fishing, and wild plants. The villages of the early Christian era mainly lack the civic-center features of the preceding period. The final period, from A.D. 1300 to 1750, seems to represent a stabilized version of this impoverished culture and was the situation encountered by the Spaniards during their incursions into the zone during the colonial period.

South and Western Huasteca

To the south and west of the Huasteca area in which MacNeish has worked there were more sophisticated developments (MacNeish 1971). These sites lie in what are now the states of San Luis Potosí, Hidalgo, and Querétaro. The area is thinly known, and the sample is poor in quality.

Ceramics show that the area was occupied by at least the end of the Late Formative period. Some Teotihuacan contact is indicated by certain forms of pottery. Presumably this part of the Huasteca was exploited by or was a trade area for the Teotihuacano. Presumably also, the area had gone through much of the same cultural evolution as that which we have seen for the area to the east and north in Tamaulipas. However, it did not stabilize at the same level. By about A.D. 500, a number of ceremonial centers, large and small, had developed. The pattern of site hierarchy is similar to that of the Etzatlán region in West Mexico.

Tamuín, located on a river in San Luis Potosí, is one of the largest of the sites of the Late Classic and Early Postclassic periods. Presumably the

center was founded in the Formative period, but the period best known at the site is the Toltec horizon. The site occupies about 17 hectares (42 acres) and has dozens of mounds, but no satisfactory map has ever been published. The largest platforms are arranged about the inevitable open courtyards. Excavations have been concentrated around the south platform. This structure seems to have supported a number of perishable buildings.

One small temple platform produced an interesting mural, painted in dark red on a stucco-covered altar. Associated pottery dates the mural to the ninth century A.D. Eleven resplendent personages appear in a line, all facing in the same direction. In this arrangement and theme the painting is similar to the carved Toltec altars noted before at Tula and Toltec Chichen. Five persons are seated and six stand, all holding diverse and ornamented items that appear to be fans, spear-throwers, and symbols of rank. One individual holds what seems to be a human head by the hair.

A small nearby structure produced a magnificent piece of sculpture, the so-called Huastec Boy. The appealing naturalism of the piece is strongly modified by intricate low reliefs on various parts of the body, probably indicating tattoos. A child clings to the "boy's" lower back. The "tattoos" are stylistically related to the paintings. Other sculptures from the Huasteca seem to represent life images of a person on one side and a death image on the other.

Tombs were found on both sides of the main staircase of the south platform, all with men and women buried in the fetal position. Only the south line of tombs had offerings, including brand-new vases apparently acquired or made for the occasion.

The Aztec did a great deal of trading with the Huastec in Late Postclassic times. Distinctive pottery then being made in the area features intricate black-on-white designs painted on various forms of jars and vases. Some are effigy vessels and many have pouring spouts and strap handles.

Other large centers such as Tancanhuitz, Tantoc, and Tamposoque are similar to Tamuin but much less known.

The Gulf Coast section of the Huasteca had a long ceramic sequence running back into the Early Formative period. This tropical area is roughly centered about Tuxpan and Tampico. Tuxpan (or Tuchpa) is mentioned in some detail in the Aztec tribute lists of the sixteenth-century *Codex Mendoza*, as will be seen in chapter 9. One site is better known than others in the area: La Florida. Only one structure there was excavated by G. Ekholm (1944), principally because most of the site had already been destroyed. The clay platform and perishable wood-roofed temple atop it were both round. The latest construction phase dates to the fifteenth century, probably about the time that the Aztec, under Moteczoma I, conquered the zone (A.D. 1460–61).

Ethnohistorical documents state that the Huastec, like the Totonac, had once occupied much more territory than they held in the sixteenth century. It seems clear that a principal reason for this territorial contraction was the fact that Nahua groups, including the later Aztec, had pressed the Huastec northward.

The Valley of Toluca

Although the Valley of Toluca is an attractive place ecologically, the Matlazinca who occupied it during at least the Late Postclassic period were in a truly unenviable position. To the west were located the formidable Tarascans, while the predatory and militaristic Aztec were just over the mountain range to the east.

At the time of the Spanish Conquest, a principal Matlazinca city was Tecaxic, located near Calixtlahuaca. Ixtlilxochitl mentions that the Matlazinca were conquered by the Toltec and forced to pay tribute. According to several chronicles, the Matlazinca later underwent great difficulties in dealing with their more powerful neighbors during the fifteenth century. Lack of political unity led to disorganization in the face of Aztec aggression during the reign of Axayacatl. A series of wars begun in 1473 led to eventual Aztec domination of the central valley of Toluca, and later, in 1476, Malinalco. Tizoc, Axayacatl's successor, had trouble with the Matlazinca and destroyed Tecaxic's temples during his punitive campaign. Tecaxic also made the error in 1510 of rebelling against Moteczoma II, who abolished the town. Nearby Calixtlahuaca, which had been favored by the Aztec, assumed Tecaxic's place in the tribute lists.

Having inherited the tributaries in the Valley of Toluca, Ahuizotl, the ruling Aztec emperor, had construction begun in 1501 on the House of the Eagle and Tiger Knights, which perched high on its cliff above Malinalco.

The Archaeological Record: Calixtlahuaca and Malinalco

Calixtlahuaca is located on the steep hill called Tenismo, which was anciently terraced. Middle Formative material has been found in the Valley of Toluca but not at Calixtlahuaca. Excavations at the site in the 1930s established a ceramic sequence running from Teotihuacan times to the Aztec conquest period. The ceramic record is supplemented by both architecture and the chronicle information summarized above.

Seventeen major buildings and complexes are scattered without much apparent plan over the terraced areas. One of these, Structure 3, has a round plan and went through four stages of construction. The first stage dates from the period of Teotihuacan, although the building shows no apparent relationship to the architecture of that greater city. The final building is the platform on which the temple to Quetzalcoatl-Ehecatl, the wind god, was located (fig. 8-17). Presumably this temple was one of those



Fig. 8-17. A late temple platform at Calixtlahuaca, the central Mexican capital of a regional state eventually conquered by the Aztec.

destroyed by Axayacatl or Moteczoma II. A well-done sculptured figure of a man equipped with not much more than the wind god's face mask was found in the ruins of this temple. Structure 17 is actually a complex of many rooms that may have been a true palace structure. It includes many small "patios, living rooms, small shrines, and passageways at different levels" (Marquina 1964, 232).

Malinalco is located in a small valley just to the south of the main Valley of Toluca. It is a zone of extraordinary fractured cliffs hung with greenery. High on one of these cliffs, seven hundred feet above the valley floor, the House of the Eagle and Tiger Knights was built on a shelf cut from the rock (fig. 8-18). Most extraordinarily, major portions of the buildings themselves are cut from the cliff rock, forming an architectonic conception which is essentially that of a gigantic sculpture. The shelf was cut around a corner, leaving an L-shaped space, and the rock forms the lower parts of the temples, which were roofed with elaborate perishable materials. Channels cut into the cliff rock lead rainwater away from the buildings.



Fig. 8-18. The cult temple of the Eagle and Jaguar Warriors, elite groups in the Aztec army, at Malinalco, Morelos, Mexico. Carved from the rock cliff and embellished inside with eagles and jaguars, this complex of temples was built at a spectacular location.

Three of the temples are round in plan. Structure I has a bench within, upon which are carved eagles and an ocelot pelt. The building was evidently dedicated to the sun god in spite of the round plan. In Structure III, the front of which is built of masonry, were found the remains of a large mural. The fragments show a line of warriors advancing to the attack with their shields and spears at the ready. The theme harks back to Tula at least, but the style is definitely Aztec.

The present town of Malinalco somehow preserved a magnificent carved wooden drum until the beginning of this century. It is now in the National Museum. Presumably it comes from the temple zone above, but in any case it is appropriately carved with eagles, dancing ocelots, and solar signs.

Malinalco is only one of dozens of shrines and pilgrimage temples that once were scattered throughout Mesoamerica. Some, such as the great temple of Quetzalcoatl at Cholula, drew pilgrims from far and wide. Some, like Malinalco, were dedicated to special activities and are somewhat analogous to the ritual buildings of such organizations as the Masonic order

among us today. Still other temples probably were dedicated to gods of only local interest. For example, there is a small Late Postclassic temple located above the present, anthropologically famous town of Tepoztlan. The temple is dedicated to the god of intoxication and pulque, Ome Tochtli (2 Rabbit). The building is known today as the Temple of Tepozteco, and its pilgrims are tourists.

Tepexi el Viejo: A Late Fortress Site

The Tepexi el Viejo fortress is located in southern Puebla near the Mixteca Baja. We will spend perhaps more space on it than seems warranted, but it represents one of the few small states about which we have both archaeological and documentary information, thanks to the work of Gorenstein (1973). In the vicissitudes of Tepexi we may see mirrored something of the typical dilemmas and resolutions of this type of traditional Mesoamerican community.

Tepexi ("Rocky Place") is mentioned in chronicles as being part of a kingdom of southern Puebla ruled by the city of Quauhtinchan until that place was conquered by Tlatelolco (Tenochtitlan's twin city) in A.D. 1438. Tlatelolco made marriage alliances with various towns of southern Puebla, including a linkage with the ruling family of Tepexi. In the meantime Tepexi pursued its traditional rivalries with other small city-states to the south and north, fighting with them over tributaries. The city apparently remained more or less independent until 1503, when the Mexica-Aztec conquered the place and made it tributary to one of their regional garrison points, Tepeaca, located 70 kilometers (44 miles) to the north. The fortress remained in this network of the Aztec tribute system until 1520, when it was conquered by Cortés. Soon after this final disaster, the remaining population was congregated at a village site that replaced Tepexi el Viejo as the regional capital. This is the town of Tepexi de Rodríguez, also known as Tepexi de la Seda. The latter name comes from the fact that a strong silk (*seda*) industry was introduced by the Spaniards in the early colonial period as was done in the Mixteca Alta. The silk industry in both areas was successful for a while and then failed due to the population losses during the late-sixteenth-century plagues and the competition of Chinese silk in the European markets.

The Archaeological Record

Tepexi Fortress is located atop a steep ridge that is defined by three deep canyons. One canyon is the bed of the Xamilpan River, and most of the cultivable land around Tepexi is located there. *Lamaborado*, a terrace-check dam system of soil conservation, was used on the steep hillsides.

The fortress itself is only the main precinct among five associated hilltop groups of formal architecture. The flattened top of the ridge was retained

and expanded by the use of massive outer walls that were as high as 15 meters (50 feet). Formal gates and what may have been guardhouses on the walls complete the inventory of fortifications. The height of the walls and the fact that they were plastered were the major functional features of military construction at Tepexi.

Construction methods for the walls and other buildings were of the same nature. A mass of adobe mortar was combined with blocks of caliche. Shaped caliche blocks faced the walls, being laid in the same mortar, and were finished off with a thin plaster. Plazas, pyramidal platforms, and building complexes occupied the space inside the walls. The building complexes are agglomerations of rooms of the sort we have seen repeatedly and which were probably used as elite-class housing. No burials have been recovered, because most of these were looted in 1949. Counting all of the roofed-over space, Gorenstein estimates that the 62,000 square meters (203,360 square feet) could have accommodated between six thousand and twelve thousand people. In a 1565 census, Tepexi is listed as having ten thousand to eleven thousand people, lending weight to this estimate.

The ceramic sequence runs from A.D. 1300 to 1520, thereby falling entirely within the Late Postclassic period. Ceramics for all three phases indicate heavy reliance on local manufacture for domestic pottery but strong contacts with outside areas for fine pottery. Especially important are Mixteca-Puebla regional polychromes from the Mixteca and Cholula as well as black-on-orange pottery from the Basin of Mexico. Ceramic linkages with Veracruz are confirmed by documentary evidence for two major trails leading from Tepexi to the Veracruz lowlands. One trail connects with Cempoala on the coast, and the other turns southward to the area of the Tuxtla Mountains.

Gorenstein comments that the tributary system of a small city-state such as Tepexi was decentralized. Although subordinate communities owed economic tribute to the dominant community, they were left more or less alone in their sociopolitical affairs. According to Gorenstein, this decentralization also correlates with the nonspecialized militarism reflected at Tepexi el Viejo. The Aztec had moved beyond the simple economic tribute system and toward control of the sociopolitical affairs of their tributaries. This trend was part of a move to a greater degree of state centralization. In the more traditional characteristics, Tepexi represented a much older and more vulnerable order of society. Both Aztec and Tepexijeño, however, fell before the Spaniards.

The Tehuacan Valley: The Last Phases

The master chronology of the Tehuacan Valley includes a long Postclassic phase called Venta Salada, which runs from A.D. 700 or 800 to A.D. 1520.

The Tehuacan Project members and Edward Sisson have been able to amass a remarkably detailed amount of data relating to the Tehuacan Valley in the Postclassic period, including information on ordinary life (Sisson 1973, 1974).

Valley population is estimated by MacNeish (1962, 41) to have been between 60,000 and 120,000 just before the Spanish Conquest. This population was supported by intensive agriculture based on a variety of irrigation techniques. The main technique used on the relatively flat valley floor was and is still the canal system. These systems have a dendritic pattern, as seen in R. B. Woodbury and J. A. Neely's maps (1972), and were usually dependent on springs. Many of these systems have been fossilized by the travertine content of the water. Almost as important were combination terracing and check-dam systems used on hillsides. Large dam building was tried once in the Tilapa River area of Tehuacan but finally given up. The Purron Dam, begun about 700 B.C., with the last phase of the immense structure built about A.D. 300, silted up and was abandoned. Early Postclassic population, therefore, also abandoned the area. Our own Corps of Army Engineers might do well to study this example.

Of the 456 archaeological sites in the Tehuacan Valley, 357 have Classic and Postclassic remains. Coxcatlan is recorded as being one of the principal towns of the area in the sixteenth century and the center of a tributary network. Before the Spanish Conquest it had been a tributary of Teotitlan del Camino in the Mixteca area.

Salt production is mentioned in many colonial documents as being a principal resource of Coxcatlan both then and in pre-Hispanic times. The 1580 production figures are listed as being between 225 and 280 kiloliters (6,400 and 8,000 bushels) per year, some of which was exported to the Basin of Mexico and to mining areas in the north and northwest. No pre-Conquest tribute list notes salt as a tribute item for Coxcatlan, however. Salt was produced by solar evaporation of water from saline wells and by leaching it from mineral-bearing earth. Salt-making sites in the valley are marked by special coarse-pottery salt molds, mounds of earth with pottery tubing probably used for brine filtering, and solar evaporation pans. The latter are still in use in the valley today and are nearly identical to the ancient examples.

Sisson has excavated in the vicinity of many of the small ward temples within Coxcatlan Viejo and other sites. At Coxcatlan Viejo houses were clustered around what are apparently *calpulli* temple plazas. The remains of looted tombs have been found near the tops of these temples, while dozens of cremation burials in coarse jars and pots are buried in front of them. In one case ninety-seven cremation burials were found under a plastered apron extending out from the temple base.

The major domestic ceramics of the valley during the Venta Salada period are heavily regionalized. However, Mixteca-Puebla polychromes (Mixtec and Cholula) and Veracruz ceramics are also found, as at Tepexi el Viejo.

Perhaps the most fascinating part of Sissons's work has been in the common housing areas. These houses were not necessarily mean and humble. One house excavated at the site of San Mateo Tlacuchcalco (TR 65) contained at least 500 square meters (1,650 square feet) and perhaps double that. The pattern is one of several rooms or apartments clustered around an open patio, or even a series of patios. Stucco floors cover the patios, and the interiors of the rooms are plastered. Drains lead rainwater away from open areas. Plastered water-storage basins set in floors are nearly identical to those in use in modern Coxcatlan. Several houses have evidence of craft specialties: spinning and weaving and pottery making. One of the few examples of a prehistoric kiln in Mesoamerica was found in a house at Coxcatlan Viejo. An amazing find of a carved greenstone Olmec figure is truly puzzling. No explanation can be readily suggested for the presence of a 2,400-year-old antique as the property of a humble potter in whose house it was found.

Altogether, the housing and artifacts of the Venta Salada period indicate a fairly high standard of living for even common people in the Tehuacan Valley. Sisson makes the point well:

The patios, open to the sky, must have been the focus for most activities carried out within the residence. Here younger children could play while their mothers chatted and went about their daily activities. Men engaged in certain crafts may have worked on the patio floor. Probably on every clear day, a woman could be found seated on the patio floor weaving, one end of her backstrap loom attached to a circular column of one of the surrounding rooms. In the evening, men returning from the fields or from the hunt would gather in small groups in a neighbor's patio to relax after dinner and to discuss those things which men, and farmers, and hunters always discuss. Finally, each man would return to his wife and children and fall asleep in his family's room located along one side of a patio. Before dawn, the patio would echo with the sound of *mano* on *metate* and the patting of *masa* between bare hands, and the daily cycle would have begun anew. (1974, 15)

It was this life-style which ultimately proved the most durable and which still survives today in Mexico, Guatemala, Belize, and El Salvador, the modern political inheritors of ancient Mesoamerica.

CHAPTER 9

THE AZTEC

*We welcome you
To this city of Mexico Tenochtitlan
Which is in the great pool of water
Where the eagle sang and the snake hissed!
Where the fishes fly,
Where the blue waters came out to join
the red waters!*

*Priests' address to captives of Tepeaca being led
into the city of Mexico, in Durán 1964, 101*

*Coming to what all of us saw in this country, a thing that amazed
us was the number of people found here. This was observed by the
Spaniards who came early to this country, before the great plague.
Durán 1964, 4*

*Then Montezuma took Cortés by the hand and told him to look at
his great city and all the other cities that were standing in the
water and the many other towns and the land around the lake. . . .
So we stood looking about us, for that huge and cursed temple
stood so high that from it we could see over every thing very well,
and we saw the three causeways which led into Mexico . . . and we
saw the [aqueduct of] fresh water that comes from Chapultepec,
which supplies the city and we saw the bridges on the three cause-
ways which were built at certain distances apart . . . and we
beheld on the lake a great multitude of canoes, some coming with
supplies of food, other returning loaded with cargoes of merchandise,
and we saw that from every house of that great city and of all the
other cities that were built in the water it was impossible to pass
from house to house except by drawbridges, which were made of
wood, or in canoes; and we saw in those cities Cues [temples] and
oratories like towers and fortresses and all gleaming white, and it
was a wonderful thing to behold!*

Díaz del Castillo 1968, 218

THE WONDERFUL CAPITAL city of the Aztec is gone. It disappeared in 1521 in the agonizingly brutal Spanish siege of ninety-one days during which the canals were filled up with the demolished remains of its inhabitants' houses. This was done to open large areas for cavalry operations and fields of fire for artillery. At the end of the siege the city was a scorched, battered zone with some areas of low one-story houses left and the fire-marred remains of the larger public buildings. Even these were not allowed to remain, but disappeared rapidly after the Conquest to be used in building the new colonial capital.

The inhabitants of the city were much reduced in number. Many were buried in the ruins of the old city, and the few who remained and the many more Indians from other cities of the valley were impressed into building a new city. In so doing, they were forced to systematically dismantle the remains of Tenochtitlan. The public buildings of the Aztec were not only unsuitable for the new social structure and administration; they were looked upon as positively demonic in their associations with the pagan religion. The Spaniards had no interest in preserving any of the ruins, and certainly not the hated remains of the great temple and other buildings where so many of them had died in combat or had been sacrificed to the Aztec deities after capture. Although the city itself is gone, there are two means by which we can reconstruct a picture of the Aztec capital and Aztec culture. One way is through documents written in the early sixteenth century.

First a word about the ethnic and cultural labels that litter this part of the book. The name Aztec collectively denotes the people of the Basin of Mexico in 1519. Many groups made up this culturally diverse area, and each considered itself unique and separate. Chalca, Xochimilco, Tepanec, and Acolhua are among the most important of these peoples. Each group was centered on a capital city with its dependent communities. The Mexica (from which comes the name Mexico) are the group most often thought of by the public when the name Aztec is used. Their complete name was Culhua-Mexica, which derived from the city in which they resided for some time, Culhuacan. The Aztec Empire refers to the political system built by the Triple Alliance, which was composed of the Mexica (capital at Tenochtitlan), the Acolhua (capital at Texcoco), and the people at the small city of Tlacopan.

The sixteenth century was one of rebuilding of the city of Mexico, but it also was one in which the Church saved and converted thousands of souls daily. At the same time there were, among these early churchmen, individuals who wished, for various reasons, to record information about the old native culture they were supplanting. One motivation was to be able to avoid the evils of concealed survivals of Aztec religion and its practices. Father Diego Durán wrote two of the best accounts from this motivation with his *History of the Indies of New Spain* (1964, 1967) and *The*

Book of the Gods and Rites, and The Ancient Calendar (1971). Bernardino de Sahagún was another scholar-priest who worked at this task of salvage. He produced a series of volumes that are a monumental and invaluable source of reliable information about the Aztec. Nearly as informative as the text are the illustrations that Sahagún commissioned from native artists. Both Sahagún and Durán talked with many Indians who had lived and been important before the Conquest. A crown official, Judge Alonso Zorita, in his *Life and Labor in Ancient Mexico* (1963), wrote one of the best accounts of Mexican social structure and economics in answer to a government questionnaire. Numerous others wrote documents that preserve the Aztec in both description and illustration. Durán and Sahagún each employed a team of scribes and artists.

The sixteenth-century conquerors also wrote documents, either in self-justification or as memoirs or bureaucratic reports. Cortés's five letters to Charles V (1963) written during the Conquest, Bernal Díaz del Castillo's memoirs (1968) written in his old age, Francisco López de Gómara's *Life of Cortés* (1964), and others are all examples. Paradoxically, these men who destroyed and rooted out the civilization of the Aztec also furnish us the means for reconstructing that same culture and give us eyewitness accounts of Tenochtitlan–Mexico City at its height.

Native chronicles are revealing. There are several kinds, including pictorial codices, Nahuatl texts written in Spanish script, and records filed as documents in lawsuits in Spanish courts. Wills, tax records, and bureaucratic reports on native peoples of New Spain all contribute immense amounts of detail and perspective to our picture of the Aztec.

On the other hand, the records are incomplete, contradictory, confused, and confusing. Fortunately, a series of dedicated scholars have set out to unravel them, an example being an accurate list of the Aztec kings. There are at least thirty-nine records that variously mention the series of nine rulers. Boone (1992) has produced a summary table of these king lists and has discussed the consensus opinion regarding them. Another approach has been made by Susan Gillespie (1989), who has criticized the more standard scholarly approaches to this matter as being too selective and unconvincing. She argues that Aztec kingship and succession can only be understood through the use of hermeneutics and structural analysis. However, it appears to this author that this approach also has its limitations and selection problems. I have therefore gone with the results of the more standard analyses.

There are frustrations and dead ends in such materials, inasmuch as none of the chroniclers answers all of the questions that we would like answered. For example, none gives an exact figure for the population of the Aztec capital. Possibly the Aztec themselves had no precise idea, although this is unlikely. Possibly the census records mainly perished in the holocaust of the Conquest, and the knowledgeable native scribes and bureaucrats

were probably never consulted even if they did survive. We are not certain of the exact arrangement of the buildings or even of the number of buildings in the central square of Tenochtitlan. We can come to a fair approximation of an answer to both these questions by comparing the accounts, factoring out error, and weighing the evidence, but in the end we will still be left with a substantial residue of doubt and probable error. This being so, it is well that we have another source of information to which we can turn—archaeology.

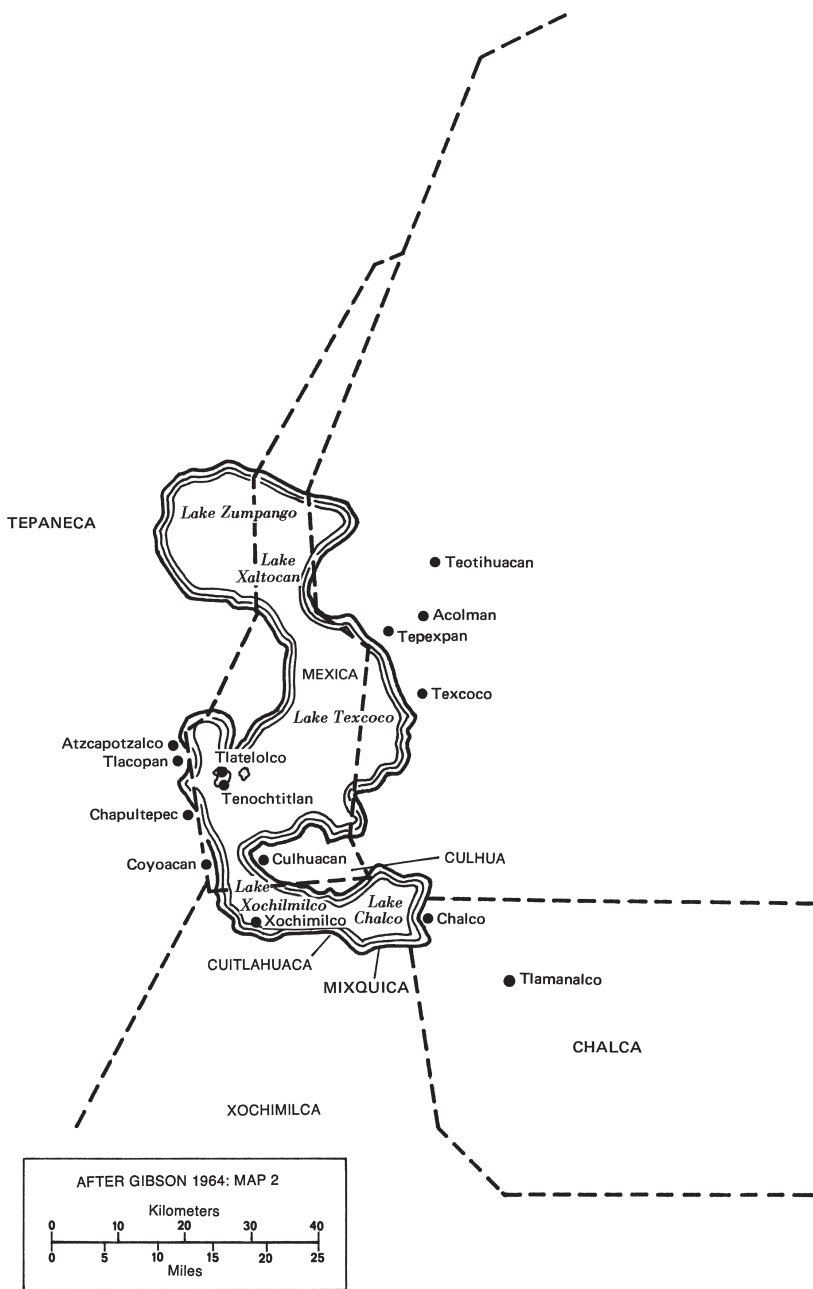
Fortunately, the massive Templo Mayor (Great Temple) project of Eduardo Matos Moctezuma has produced enormous amounts of data which are tightly controlled by excellent excavation techniques. This information is supplemented by the subway salvage excavations. The Plaza of the Three Cultures dig gives us still more data, and the general sequence and surveys (cf. Sanders, Parsons, and Santley 1979) for the Basin of Mexico aid us in reconstructing the ancient city.

Natural Setting

The closed Basin of Mexico before 1519 was physically occupied by a chain of interconnected shallow lakes: three or six, depending on how one splits them up (map 9-1). The Aztec themselves seem to have spoken mainly of three lakes—Chalco, Texcoco, and Xaltocan, proceeding from south to north. Lake Texcoco was the lowest (deepest), and water flowed to it from the other lakes. The basin is at about 2,200 meters (7,200 feet) above sea level and has an area of about 7,833 square kilometers (3,024 square miles). Of this total, about 15 percent was occupied by water. These bodies of water profoundly influenced climate, agricultural systems, population size, and even the social forms developed in the basin.

William Sanders, based on a careful study (1970) and aided by E. E. Calnek, estimates the population of the basin in 1519 as between 1 and 1.2 million. He estimates the population of the city of Tenochtitlan as between 122,000 and 200,000, depending on how many tributaries the city called on. The Spaniards have left records indicating that about fifty small city-states existed in 1519, and Sanders estimates that most of these domains had between 14,000 and 16,000 people. There were also a few large cities besides the Aztec capital. These figures seem well reasoned, although Sherburne F. Cook and Woodrow Borah (1960) have made higher estimates totaling 2.5 million for the basin.

Whatever demographic estimates one accepts, it is clear that there were substantial numbers of people involved, and the next question is, How were they all fed? This was also a continual question in the minds of the rulers of these vast numbers. The ancient chronicles mention a number of famines brought on by natural disasters—plagues of locusts, droughts, storms, and floods. Between 1450 and 1454 there were particularly bad



Map 9-1. Basin of Mexico, the heart of the Aztec Empire, and its topography in 1519.

harvests, and people sold themselves and their children into slavery in order to survive. One answer, then, is that they were not all fed all of the time (Kovar 1970). Another, as Sanders has pointed out, is that the living standard for many of the lower-class people was even lower than it is for the rural population of central Mexico today. Alonso de Zorita (1963) mentions the extreme poverty of the lower classes, and Diego Durán (1971) says that one of the tasty feast-day dishes was a bean and corn stew (*etzalli*), which was considered costly enough that not all could afford it. He further says that no people were capable of eating better at their neighbors' expense and more frugally at their own expense; food, because of its scarcity, was too valuable. Confirmation of this picture of subsistence-level existence for the masses comes from the nearby Tehuacan Valley, in which extensive use was made of cactus fruits (*Opuntia*) and grass seeds in the local diet. A Spanish questionnaire of the sixteenth century from the Teotihuacan Valley indicates the same use of wild plant seeds and fruits as staples for poor people. The implication, then, is of a density and level of population which at times exceeded its food supply.

Agriculture and the *Chinampas*

The Basin of Mexico was one of the most intensely exploited agricultural zones of Mesoamerica. Nearly every agricultural system was used in some ecological zone of the basin. A highland slash-and-burn system was used on the upper slopes of the surrounding mountains. Dry farming was practiced widely. Irrigation systems of both the flood-water and the canal types were prevalent. Further, the famous *chinampa*, or "floating garden," technique was extensively used.

At the time of the entry of the Spaniards into the basin, there were over 10,000 hectares (25,000 acres) of *chinampas* in the southern basin alone (Chalco). The system is one of the most productive and intensive ever devised. Because of studies by Pedro Armillas, Benjamin West, and Elizabeth Schilling on both archaeological and present-day chinampa gardening, we know quite a bit about it (Armillas 1971; Schilling 1939; West and Armillas 1971; West and Armillas 1950). Tourists who have floated around Xochimilco on a Sunday afternoon have seen the system in operation although they may not have realized it.

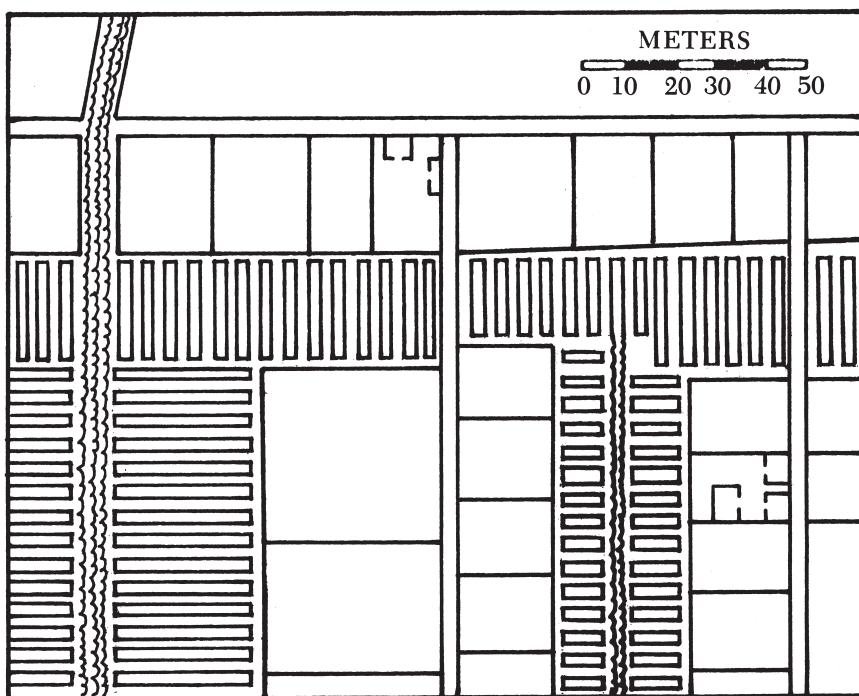
The system is essentially one of land reclamation or swamp drainage, akin, as M. D. Coe (1964) points out, to the drainage of the fens in England or the polders in the Netherlands. These so-called floating gardens never actually floated but were created by making efficient use of the standing water, rich alluvium, and marsh grasses and other vegetation in the swamps. Mats of floating water plants growing on the deeper and open ponds in the basin were used to build up the marshy areas for *chinampas*. These mats—long, rectangular strips of vegetation—were towed to suitable sites in the



Fig. 9-1. Xochimilco, Mexico City. A remnant of an old raised-field (chinampa) district, which still supplies vegetables and flowers to the capital city. (Courtesy Ford Green)

marshes and dragged onto the selected spot for the new *chinampa*. The mats were then anchored by stakes from the native cypress, which would take root and eventually become trees like those one sees at Xochimilco today (fig. 9-1). Successive layers of vegetation were dragged into place until the *chinampa* site was raised above water. The sites usually measured about 10 meters by 100 meters (30 feet by 330 feet), and canals were dug on three or four sides of them. They were laid out in a grid pattern that allowed for continual percolation of nutrient-rich water through the entire *chinampa* (map 9-2). The next stage of construction was to pile on lake mud from the canal bottom. This mud was periodically renewed and was also rejuvenated by the use of night soil. Special canoe-latrines collected human waste in Tenochtitlan for this purpose. Ditches extending into lakeside land expanded the wetland gardening zone.

One of the most efficient aspects of the *chinampa* system was the use of the farmland thus created. A small section might be set aside in a corner



Map 9-2. A section of a central segment of Tenochtitlan, which was composed of many raised fields (*chinampas*) and house lots. (After Calnek)

for germination purposes and all crops planted there first. Tomatoes, corn, squashes, and other vegetables would be planted in small squares of mud, and the resultant seedlings would then be transplanted to crop plots elsewhere on the *chinampa*. Thus, germination losses were taken on a relatively small amount of ground, and the transplanted crops were made up of those plants that already had a good start, presumably being the hardiest. The main part of the *chinampa* was devoted to either a variety of truck crops or a main food crop such as corn. Another form of seedbed indeed floated, and it is from these that the legend of the floating gardens no doubt comes. Floating nurseries of reeds, cattails, and other water plants supported the germinating seedlings, which were then towed to the appropriate *chinampa* for transplanting.

Several *chinampas* made up the farmland for one family. This is clear from various maps and documents. The variety of crops indicates that throughout the year there were a number of different foods coming into harvest stage. At Xochimilco modern *chinamperos* expect about seven crops

a year from a plot. Once a crop is harvested, another set of newly germinated plants replaces it in the fertilized soil. In other words the *chinampa* system allows a year-round productivity of an amazing amount and variety of roots, vegetables, cereals, and fruits. The 10,000 hectares (25,000 acres) of *chinampas* in 1519 in the Chalco zone, Armillas estimates, supported about 100,000 people. However, each family of *chinamperos* did not nearly consume its yearly produce, and over half would be available to feed non-farming people: the ruling elite, artisans, soldiers, and bureaucrats of the Aztec Empire. Sanders (1970, 9) estimates that 10,000 hectares would support 180,000 people. In other words production is estimated at a carrying capacity of 10 to 18 persons per hectare (25 to 45 per acre). J. R. Parsons (1976) has also calculated the similarly sustained population of the Texcoco plain, which brings the total to about 300,000 people living from the produce of swamp-reclamation land. Some of the production, however, was of flowers, as at Xochimilco today. Durán says that one of the great pleasures of the senses among the Aztec was smelling flowers: "They find gladness and joy in spending the entire day smelling a little flower or bouquet made of different kinds of flowers; their gifts are accompanied by them; they relieve the tediousness of journeys with flowers" (Durán 1971, 238).

Xochimilco, incidentally, counted among its principal gods two that were associated with the *chinampas* and canals, Amimitl and Atlahua, aspects of the general water-god complex (Sahagún 1970, 1:79).

The use of marshes for crops encouraged waterfowl and aquatic animals, both of which were desirable items of diet. Large numbers of migratory birds used the lakes and were hunted. Vast quantities of fish were taken and were a significant part of the diet. The *axolotl*, a large salamander (*Ambystoma* spp.), was and is esteemed for its meat in the *chinampa* zones. Sahagún's informants said that they are "good, fine, edible, savory: what one deserves" (Sahagún, 1963, 11:64).

The start of the *chinampa* system is possibly in the Preclassic period, dating to the last centuries B.C. Armillas's work (1971) seems to show a sort of regression in *chinampa* activity from about A.D. 1 to A.D. 1200, and he thinks that this is due to a rise in the lake level during that period. Such rises are historically known, and if such a rise did occur, it would flood out many of the marshy areas and coalesce the deeper ponds into still larger lakes. About A.D. 1200, however, it is thought that the lake level dropped; and beginning about A.D. 1400, because of the pressures of population, the *chinampa* system was spread into the new marshes under centrally planned guidance. The *chinampa* grids, feeder, and main canals are too well integrated to allow for individual initiative as the prime mover in this expansion.

Small islets dotted the lakes or were created in the marshes by filling cribbing of posts and wickerwork with mud and vegetation. These artificial islands supported households or even communities. Even today, these small

sites of Aztec culture can be seen in the form of low mounds as one drives across the flat former lakebed near Chalco. They are locally called *tlateles*. Beginning with some rocky islets, the Aztec built their cities of Tenochtitlan-Tlatelolco in this way.

In the sense that the *chinampa* system uses a drainage technique, it resembles the “drained-field” techniques that are found in the lowlands of the New World, usually in a tropical forest environment. It has been seen that very similar fields are to be found extensively throughout the southern Maya Lowlands. Further, the *chinampa* system seems to have been more widespread in central Mexico than is generally allowed. Long strips of formerly cultivated fields have been found in Puebla, while the old name of Cuautla in Morelos, Cuautla Amilpas, is suggestive. *Amilpas(n)* means “water-cultivated fields” in Nahuatl, although this term may refer to ditch-irrigated land as well.

The famous “Maguey Map” possibly shows a section of the northwest corner of Tenochtitlan, where a series of household heads are illustrated sitting on their *chinampas*. Calnek (1972) believes that this map belongs to another of the many island “suburbs” in the western embayment. *Chinampas* were definitely part of the main city in any case, as Calnek demonstrates from legal documents of the colonial period. A striking aspect of this study is that *chinampa* land associated with each household is only enough to produce from 1 to 15 percent of the needs of the estimated population. In other words the city was heavily dependent on the surrounding *chinampa* and other agricultural areas for support. Indeed, Sanders estimates that from 40,000 to 120,000 of the possible 122,000 to 200,000 population of the city were tributary farmers from outside the city. The core city had a probable nonfarmer population of about 82,000.

The Chalco zone is apparently where the *chinampa* system got its start. The southern basin has fewer killing frosts and is generally better for agriculture because of the greater rainfall. These circumstances would lead to intensification of cropping as population grew. The southern lake was fresh water, and the system requires constant freshwater circulation. Texcoco, the central lake and the location of Tenochtitlan, was more turbulent, deeper, and, most crucial, brackish or saline. A heavy charge of minerals was picked up by the rivers draining into the eastern edge, the deepest section of the lake. The other lakes also overflowed into Texcoco. The ever-accumulating saline waters would usually lie in the eastern, deeper edge of the lake, with the fresh water riding on top. The western edge of the lake was shallow, mostly fresh water, and marshy, a likely spot for *chinampas*. However, before the Aztec arrival in the basin in the thirteenth century, the area had never been extensively used for this purpose in spite of population pressures, because of periodic floods that drove the saline waters from the eastern side of the lake to the west, penetrating the *chinampas* located

there and ruining them for a substantial period until they could be flushed out with fresh water. Even more serious was the inability to control the vast fluctuations in water levels.

The western embayment where Tenochtitlan was located was unsuitable for extensive *chinampa* development until these problems were overcome. This was done after the Aztec rose to power, with the help of the allied city of Texcoco. Civil engineers under the direction of the Texcocan king, Nezahualcoyotl, built a long dike closing off the western embayment. This effectively controlled most of the flooding problems but also impeded circulation within the embayment. The aqueduct from Chapultepec, where there were freshwater springs, was built to the center of Tenochtitlan to bring fresh water not only for household use but probably also for the *chinampas*. The chronicles record that it took thirteen years to build the aqueduct and that it was completed in A.D. 1466 (sixteenth-century writer, Chimalpahin 1965). A later Aztec emperor undertook to bring still more fresh water from Coyoacan against the advice of the king of Coyoacan. The latter was posthumously vindicated when the flow proved so strong that the Aztec capital suffered severe flooding.

Lake Texcoco was a formidable place with hot springs, geysers, sudden storms, and other hazards. Some writers mention whirlpools, but this seems to be a figment of Aztec mythology and cosmology. Many of the problems of the Aztec, living on an island in this lake, were hydraulic, and the dikes, aqueducts, canals, causeways, and other developments were all responses to these problems. The *chinampas*, located mainly in the more peaceful southern lake and marshes, provided a great deal of the subsistence base for these later local large-scale efforts at hydraulic engineering. The manpower to carry out such projects and, indeed, the population pressures motivating them were in part fed by the *chinampas*.

Economics, the Market System, and Tribute

The agricultural structure sketched out above may seem complicated and sophisticated, but it was only a part of a vastly more complex system. Distinct ecological zones naturally produced distinctive products by different means of cultivation. These products passed into a highly organized marketing system that redistributed them. Agricultural products were also an important part of the tribute system, which was the other major means of redistribution in the area dominated by the Mexica. Although the present-day tourist is impressed with the diversity and size of the traditional markets of Indian Mexico and Guatemala, these are much simplified remnants of the pre-Hispanic markets.

To begin with, the Valley of Mexico was part of an economically interrelated set of regions that consisted of the surrounding valleys of Morelos to the south, Puebla to the east, the Mezquital to the north, and Toluca

to the west. Sanders (1956) calls this the Central Mexican Symbiotic Region. Although many of the food crops produced in any of these areas were the same as those grown elsewhere, each zone had its specialty crops, which it supplied to the others. Thus, in the market of Mexico, there were available not only maize, chiles (hot peppers), beans, and tomatoes grown in the valley but also tropical fruits, cotton, and cacao from the Morelos and Guerrero zones, beans and *chian* from the Puebla area (Atotonilco), and maize and beans from Toluca. Maize surpluses were more common in the far eastern reaches of the Aztec Empire, near the gulf in Veracruz, and these were imported by the state in times of need.

Markets were held religiously (literally and figuratively) at stated periods: usually once each five days—four times each month, according to the native calendar—with daily markets in the larger towns. Every community of any size held markets. These markets, some specialized but all with enormous variety of selection, reflect community craft specialization in the basin as well as imports from outside it. It is known that many small towns, villages, and hamlets combined agriculture with the manufacture of items such as pottery, salt, mats, adobe, and cotton cloth. Slaves were especially to be found at Azcapotzalco and Itzacan, and tasty dogs for eating were sold in the market at Acolman. Durán (1971) reported over four hundred dogs for sale on a slow day and complained of the smell. Craft specialty markets could be found in a number of towns, large and small. Texcoco, across the lake from Tenochtitlan, was noted for cloth, fine gourds, and exquisitely worked ceramics. Cholula, east of the valley, was renowned for jewelry, precious stones, and fine featherwork. The fancier commodities were mainly available through the larger markets.

Bernal Díaz del Castillo says of the market at Tlatelolco, after spending a good deal of ink listing items sold there, “But why do I waste so many words in recounting what they sell in that great market?—for I shall never finish if I tell it all in detail” (1972, 197–98). Fortunately for us, he did continue, and tells us that paper, tobacco, yellow ointments, skins of animals, cooked foods, honey, pottery in a thousand different forms, and all of the other items had special places assigned to them in the marketplace. This market was open daily.

Tlatelolco itself was a most-favored city within the Aztec domain, since the principal men of the city were long-distance merchants who belonged to a special class. These were the *pochteca*, a group that will be discussed further in considering social organization. The market system was deliberately fostered and protected by the state; no one could transact business outside the market. Order and quality control were kept by special officials, and three judges were in attendance to decide any disputes. Commodities and goods were exchanged in a barter relationship, and there was only a skeletal monetary system based on cloaks, cacao beans, and gold dust. It

was fully as rational a system as our own international monetary arrangements. The Valley of Mexico actually was an economic unit before it was politically unified. Another aspect of this unity was that craft guilds in the valley included people from several city-states.

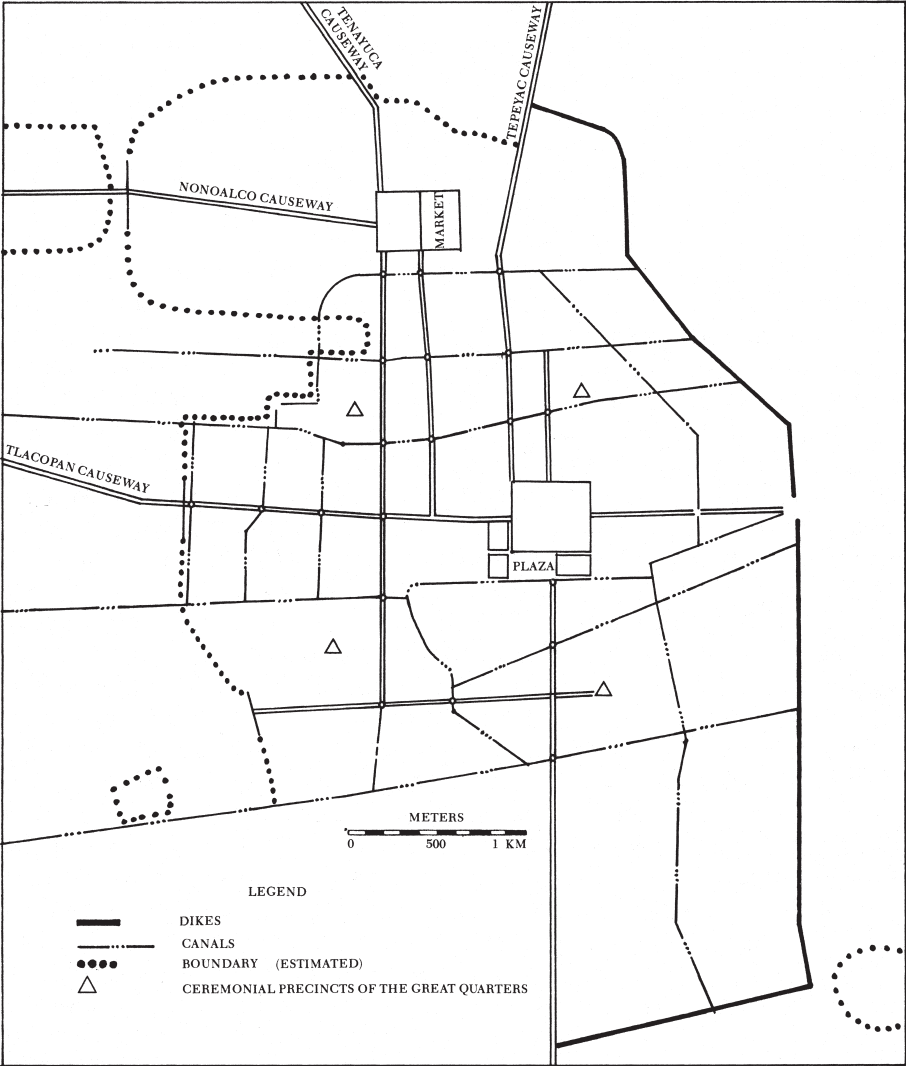
As noted, the tribute system was the other means of redistribution in this nonmonetary economy. The system was based on the kinship, social, and political units, with the various units assigned specified amounts and kinds of tribute. Zorita mentions maize, chiles, beans, and cotton as tribute. Water, fuel, and domestic service were other forms of tribute. The magnificent Codex Mendoza, named for the first viceroy of New Spain, may have made in order that the Spaniards might know how much had been exacted from each community before the Conquest (Berdan and Anawalt 1992). It was a version of an older Aztec bureaucratic document, which also gave rise to another version called the *Matrícula de Tributos*.

The tribute was onerous. Sahagún sympathetically cites the dilemma of the commoner overwhelmed by the additional burden of religious tribute in the early colonial period. The amounts and variety of foodstuffs, manufactured items, slaves for sacrifice, raw materials, and other things demanded by the Aztec of their conquered vassals were truly staggering. Based on a study of the quantities of tribute recorded in the Codex Mendoza, it seems that Tenochtitlan received enormous amounts of foodstuffs alone. One year's yields of grains and cereals were approximately as follows: corn, 6,000 metric tons; beans, 4,000 metric tons; *chian*, 4,000 metric tons; and *buaubtli* (amaranth or "careless weed"), a total of 18,000 metric tons or 19,841 short tons (Barlow 1949; Berdan and Anawalt 1992).

Human societies have always regarded some symbolically valuable items as nearly as important as food, or, at times, as life itself. The eagles of Napoleon's regiments and the samurai swords of the Japanese *daimyo* come to mind in this regard. Similarly, the Aztec traded for symbolically valuable items and made considerable efforts to obtain them. A striking example is that even after the Conquest (1575), some 10,000 quetzal feathers were obtained from Alta Verapaz in northern Guatemala. The Codex Mendoza mentions 3,280 derived as pre-Hispanic tribute from the same area (Berdan 1987). Vast quantities of clothing, warrior costumes, honey, jadeite, wood products, and the like were also demanded by the Aztec in pre-Hispanic times.

Physical Plan and Organization of Tenochtitlan-Tlatelolco

Calnek's important study of Tenochtitlan (1972) gives some idea of the physical arrangements of urban life in the city outside of the ceremonial precincts. Tenochtitlan shared its artificially created island with Tlatelolco (map 9-3). The island had been partly built up by *chinampa* construction and by the use of small islets and landfill operations around them. However, the main city was only the largest of at least nineteen island communities



Map 9-3. Major features of Tenochtitlan-Tlatelolco (Mexico City). (After Calnek)

in the western embayment of Lake Texcoco. As such, it measured at least 14 square kilometers (about 4.5 square miles). All of the other island communities were smaller, and most were agricultural, fishing, and craft-specialist towns. Whereas the interior *chinampa* districts of Tenochtitlan had households that measured about 400 square meters (4,320 square feet) at most, those on the outskirts and presumably of the outer islands averaged about

ten times that area. High-density urban buildup was probably largely confined to the main island.

The system of measurement used to lay out the city and to build structures was complex but consistent and practical. An *omitl* ("bone") was equivalent to 0.55 meter (1.8 feet), and a *maitl* ("hand") to 1.65 meters (5.4 feet), or 3 *omitls* (Aveni, Calnek, and Hartung 1988).

The heart of Tenochtitlan-Tlatelolco consisted of two main precincts and the large market of Tlatelolco. The precincts were actually a series of adjacent plazas around which were arranged the major temples, administrative structures, palaces, and other pieces of monumental architecture. Sahagún lists for Tenochtitlan's center alone, some twenty-five pyramid temples, nine attached priests' quarters, seven skull racks, two ball courts, arsenals, shops, and many other features (Marquina 1960).

The sacred central square of Tenochtitlan formed both a secular as well as a religious focus for the Mexica. The excavations of Matos Moctezuma (1982, 1988) and the studies of A. F. Aveni, E. E. Calnek, and H. Hartung (1988) give us considerable information on the layout of the precinct but also of the city itself. It appears that Tenochtitlan was planned from the beginning in accordance with certain astronomical principles. These were also influenced by certain aspects of the landscape. Finally, the mythical events of the arrival and founding of Tenochtitlan were commemorated by the public architecture.

These principles were carried out as follows. The zero point of city planning was located in front of the Temple of Huitzilopochtli. From this point extended the four major avenues, which ran roughly east-west and north-south (fig. 9-2). These avenues still exist in the form of the modern streets named Argentina, Seminario, Tacuba, and Guatemala. They divided the city into four great quarters, each apparently marked by four major temples the sites of which are now marked by major colonial churches. Within the great precinct, the Templo Mayor (Great Temple) was aligned with the rising of the sun at the equinox. There is some problem with determining whether the sun rose over the Temple of Huitzilopochtli, on the south side of the platform, or in the notch between the two temples at the top. The Great Temple is skewed about seven degrees east of true north in order to accommodate such observations. It is also aligned with a notch between Mount Tlaloc and another sacred mountain. Finally, the city layout was also determined by the Aztec system of measurement. Avenues seem to have been laid out at 660-meter (400-*maitl*, or 2,160-foot) intervals, and cross streets at 200 meters (400 *omitl*, or 720 feet). Walls of the sacred precinct were 200 meters from the zero point noted above. The zero point and the location of the Great Temple were determined in the first place, according to the famous tale of the founding of Tenochtitlan, when a Tenochca priest observed the eagle (the sun) devouring

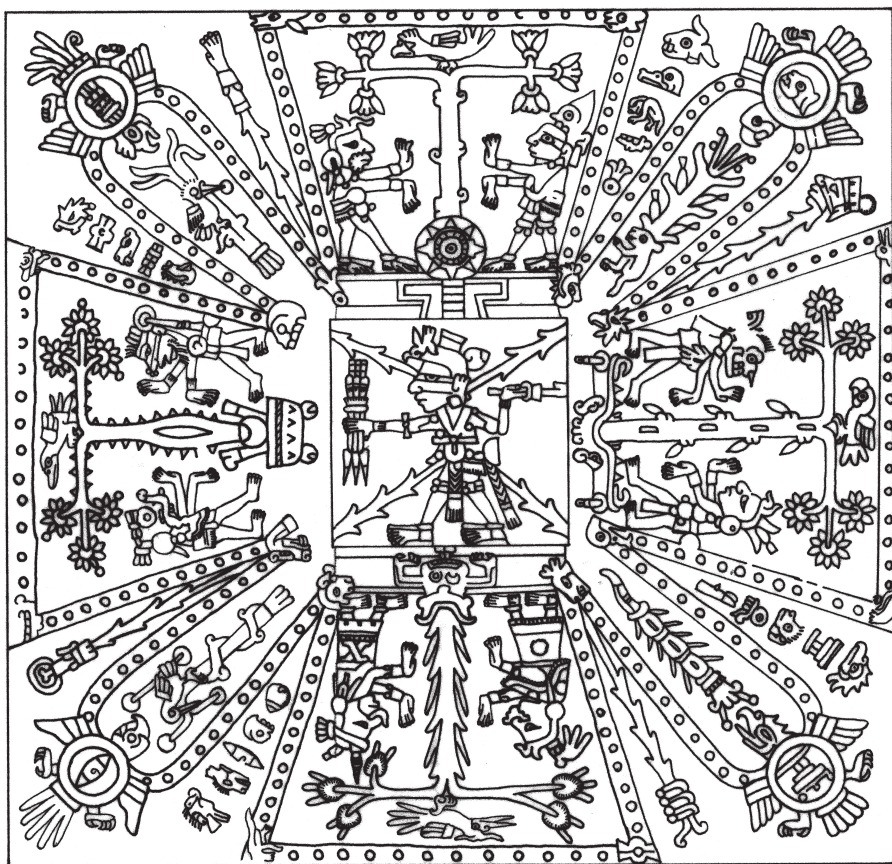


Fig. 9-2. The four quarters of the world from the Codex Fejevary-Mayer.

a snake while perched in a nopal cactus. The Great Temple was situated on the calculated spot of the sacred nopal, while other parts of the city were laid out around other, less familiar, events of the myth. The final giant structure had been rebuilt and enlarged at least seven times according to Matos Moctezuma's excavations (1987). The earliest temple dates from about 1428. Continual refurbishment and embellishment means that construction and remodeling also were nearly continuous (fig. 9-3).

Calnek (1972) shows that the residential areas around the central zones were house-to-house concentrations with no *chinampas*. Farther away from the precincts were the smaller *chinampa*-household plots in which extended families lived. In addition to the gardens, household lots included a low one-story residence surrounded by a wall that defined a large open space



Fig. 9–3. A serpent head, possibly from the Great Temple, now in a colonial building in downtown Mexico City. (Courtesy Ford Green)

next to the house. Several generations and related families lived in these buildings, which meant that from ten to thirty people of both sexes and all ages might be found in one household.

Six major canals ran through the city from north to south, with many smaller canals feeding into them. At least two major canals ran east-west through the city. Three major causeway systems connected the city with the mainland and with other island communities, but the best way of getting about was by canoe. Based on several eyewitness sources, it seems that

there were tens of thousands of small boats on the lakes, carrying people and supplies. Francisco López de Gómara (1964, 163–64) mentions two hundred thousand canoes, a figure he may have gotten from Cortés, but this may be an exaggeration. On the other hand, even in 1580, three thousand to four thousand canoes daily passed Mexicalzingo on their way into Mexico City (Hassig 1985, 62). At any rate the lakes and lagoons were an enormous advantage in a land where the alternative to water transport was carrying things on one's back. Ross Hassig (1985, 133) calculates that the amount carried by a single canoe with a single man propelling it was about forty times the amount carried by a single porter.

The city was divided into sixty or seventy wards, which corresponded to the *calpulli* units discussed below. Each of these had its own set of communally constructed and maintained buildings, including a temple, a school, and an administrative structure. Judging from this, the numbers of large and formal buildings in Tenochtitlan must have numbered in the hundreds, and the city was probably dotted with smaller plazas around which these *calpulli* buildings were grouped.

Across the lake at Texcoco was another, older, major city. H. B. Nicholson (1987) notes that this city also had a double temple, and one which may have been taller still in its last stages than that of Tenochtitlan.

Aztec architecture had flowing lines, and since most of the buildings were one or two stories, the temples impressively raised their gleaming white bulks above the general mass. The green trees and crops of the *chinampas* lightened the masonry mass of the city, as did the surrounding water of the canals and lake. The huge causeways stretched into the distance across the lakes. With the mountain walls and snow-capped volcanoes crowding the horizon in the clear air and the intense blue sky above, it is no wonder that the Spaniards thought themselves marching into an enchanted land like those described in their medieval romances.

Social Organization

Although the *calpulli* (clan) was the basic unit of social organization and most Mexica belonged to one, apparently not all lineages within the *calpulli* were equal. As noted, the *calpulli* head was elected from a specific lineage. Similarly, noble houses and lineages were ranked in order of prestige. Yopico was a lineage of importance in Tenochtitlan, for example, and seems to have furnished some of the top leadership of the Mexica. Durán (1971) mentions that some of the most prestigious religious duties in the main temple at Tenochtitlan were performed by young men and women who came on an annual basis from six favored wards, which were probably noble houses and not *calpulli*.

There were four principal social categories. At the top were the ruler of the city-state and his relatives. These, with the descendants of the preceding

rulers, made up the class called the *pipiltin*. Moteczoma II (the Aztec ruler at the time of Spanish Conquest) was a member of this class and had been selected as ruler of Tenochtitlan from a specific lineage. There were a great many *pipiltin* by 1519, inasmuch as many of the men had concubines whose children were also considered members of the upper class. Moteczoma II had made a great effort to set the elite class apart even more than heretofore. *Pipiltin* boys made up the majority of students at schools called *calmecac*, which also had a certain number of commoner pupils. These schools were directly attached to temples and dedicated to patron gods (Hassig 1988, 34). Instruction in these relatively few schools prepared their inmates for the priesthood (commoners and nobles) and for careers in the army and politics (nobles). More intellectual matters were included in the curriculum than in that of the *calpulli* schools. Besides having a chance at better education, there were many other perquisites of noble status; polygyny, two-story houses, fancy regalia, and elaborate clothing.

The *Calpulli*

Although the smallest social group in Aztec society was the nuclear family, a man and wife and their children, it was around the *calpulli* (big house) that social, political, and religious life revolved for most people. The *calpulli* was the unit that worked the land. Indeed, this communal land-management function is still a characteristic of most traditional Indian communities in Mesoamerica today. However, the pre-Hispanic unit was somewhat different. The nature of differences is the subject of one of those scholarly debates that take on the characteristics of a blood feud. There are two main interpretations of the evidence. In what might be called the Zorita school (after its principal source of information), the *calpulli* is looked upon as a more or less autonomous, kinship-oriented, landholding group. In the view of the Carrasco school (after its principal exponent), the *calpulli* was a tribute-paying group linked to a noble house.

Let us first examine the Zorita view. Membership in the *calpulli* was by birth, and generally the *calpulli* was the rural community, or in the city, a ward. Zorita (1971) and Sanders (1965) make the following characterization of this unit. Mexica families who traced their descent through the male line to a common ancestor considered themselves in a lineage. A group of lineages made up a *calpulli*, and the ordinary members married within the *calpulli* (endogamy). One of the lineages traditionally furnished the leader of the *calpulli*—the *calpule*. One of his most important functions was as custodian of a set of land maps showing the distribution of the *calpulli* lands. These maps showed the shape of the land and its area, soil qualities, water sources, and other features (Williams 1980; Williams and Harvey 1988). The *calpule* (plural, *calpuleque*) was assisted by a council of heads of households. These men enforced the rules of land distribution

and redistribution. Landholding by the individual family was only in usufruct, and the amount was enlarged or diminished according to its needs. Therefore, as a family added more children, its allotment was increased, and when the couple was alone and the children had married and left, the land allotment was decreased. If the couple was infirm or disabled, or if a man left a widow and orphans, the *calpulli* arranged for the cultivation of the man's land for the benefit of those persons. Social security was thus provided. Other economic functions were that the men of the *calpulli* worked as a unit on large-scale construction, such as building temples, or maintenance of large-scale irrigation works. Taxes to the associated noble families and to the city-state ruler were paid in labor and produce by the *calpulli*. The *calpule* thus acted as the intermediary for the individual with the state. Traditional crafts were carried on by the *calpulli*. In time of war the *calpulli* went into battle as a unit and was about the size of our modern rifle companies, two hundred to four hundred men.

According to the Carrasco school (1976; Hicks 1982, 1986; Hassig 1988, 29–31) the *calpulli* was a group of commoners attached to a noble house (a *tecpan*). The head of the house controlled its land and distributed the land to the *calpulli* members in return for tribute. The *calpulli* could also be directly attached to a city-state ruler (*tlatoani*). Again, the *calpulli* was required to render tribute and rotational labor service in order to qualify for the use of land. The internal working of the *calpulli* is regarded as the same in both schools of thought. In the Carrasco viewpoint, the *calpulli* is much more integrated into the aristocratically dominated social structure.

Young men of commoner class (*macehualtin*) were educated in a school called the *telpochcalli*, which was established and maintained by the *calpulli* in a special building. Boys from the traditionally associated noble families also might attend these *calpulli* schools. Instruction emphasized military training. Between 419 and 559 youths were enrolled in each *telpochcalli* in Tenochtitlan in 1519 (Hassig 1988, 31). Each *calpulli* had its patron deity, which was worshiped in a small temple set on a high platform.

From the above it can be seen that the *calpulli* was a fundamental unit of Aztec society. All of the larger social organizations—religious, political, economic, and military—were based upon it. These functions were reflected in the architectural assemblage that made up the typical Aztec small community center. All the structures were made of stone and oriented around an open square. The house of the *calpule* was a low, one-story structure with a few rooms and probably a patio. The *calpule* both resided there and used the house as an administrative building. He kept the land maps in his house. Another side of the square was the location of the pyramid-temple, probably with quarters nearby for a resident priest. The young men's school, found on the main square, was both a school and a residence until they married. The plaza acted as a marketplace if the community were

large enough. "The markets in this land were all enclosed by walls and stood either in front of temples to the gods or to one side" (Durán 1971, 275).

A *calpulli* community at Cerro Gordo in the northern basin was explored by Susan Evans (1985), who unfortunately was unable to excavate. In this case the remains of the community are dispersed over a terraced hillside probably dedicated to maguey cultivation. About 178 mounds were evidently the houses of the *calpulli* members, who numbered an estimated one thousand. Eleven mounds were large enough to be public architecture and probably represent the *calpule*'s house, the young men's school, and other community structures.

The great mass of the population were *macehualtin*, or free men, but as noted above, they were organized on kinship lines into *calpulli*. These free men could move either way in social rank, at least temporarily. Upward mobility was through achievement and service to the state, usually in war, religion, or trade. In this case the city-state ruler would ennoble the *macehual*, who became a member of a class that the Spaniards called *caballeros pardos*, "gray knights." The Aztec term was *quauhpipiltin*, or "eagle nobles" (Calnek 1974, 202). These men were nobles with rights and privileges for their lifetimes only; "life peers," in British terminology. They were awarded small private estates with resident labor, serfs. Both land and labor reverted to the state at the death of a gray knight, in contrast to the *pipiltin* estates, which were passed on to their descendants. Private ownership of land thus distinguished aristocrat and temporary noble from commoner. The privilege of building a two-story house was also restricted to the aristocracy. It is interesting that the estates of nobles bear a great resemblance to the later haciendas of colonial and republican Mexico.

Zorita mentions that *mayeque* were the serfs working the landed estates of nobility. They were presumably outside the *calpulli* system, being landless peasants with no rights to either usufruct or inherited lands. However, F. Hicks (1986) suggests that Zorita has confused a rarely used term which was equivalent to that for commoner, *macehualli*. By the sixteenth century nearly all commoners in the Basin of Mexico had been reduced to a state of tribute and labor obligations, *mayeque* to the aristocrats and *macehualtin* to the state.

The bottom of the social scale was occupied by slaves (*tlacotin*), who not only were landless but also had lost their individual rights. Enslavement might occur by selling oneself or one's children. This happened not infrequently when famines occurred, families hoping to buy their children survival by this means. Gambling also could lead to slavery, the ultimate wager being one's freedom. Many porters who made the cross-country trips with merchants were slaves. Captives taken in war were occasionally enslaved, but they usually were dedicated to sacrifice and did not last long. Slavery was a reversible status: one could purchase one's freedom, and a slave's children

were born free. There were other specified circumstances under which one could regain freedom.

As noted above, one of the distinctions of social ranking was in the disposal of land, private land ownership being restricted to certain of the nobility. Much of the rest of the land was held by either individual *calpulli* or their associated noble houses, dependent on which view one prefers. However, a significant amount of land was also attached to high public offices, the salaries for which were in the form of produce from this entailed real estate. Other land was set aside for support of temples and schools. Specific towns, devotees of gods, or students from the community schools worked these lands. Some land was also set aside for the defense budget. Especially in conquered communities, the Mexica would thus provide for the support of a resident garrison.

A. Caso (1963) points out that the so-called military and religious classes of the Aztec did not really exist independently. Instead, one had access to these offices by belonging to a specific lineage or class, and also through individual qualifications. Thus, though a man might have qualified through birth to fill an office, he was not necessarily elected or selected for it. There is an inherent tendency toward incompetence in rigidly aristocratic societies if birth is coupled to a right to specific social functions. This can lead to certain dilemmas such as those that occurred in seventeenth-century armies of Europe when military leadership was largely aristocratic. Thus, one was not merely promoted to one's level of incompetence but was born into it. However, specification of a certain lineage or set of lineages as the social pool from which one draws the candidate for a certain office means that the best man can be chosen. One hopes that the best man will be competent to deal with the job. Different city-states arranged succession differently. With the Mexica the preference was brother to brother and then down to the sons. Moteczoma II was the nephew of the preceding ruler and not the son. Unfortunately, he did not possess the necessary qualities to deal with the unforeseeable event of a Spanish invasion, but he was felt to be the most suitable of the candidates for the leadership of the Aztec state at the time. CuauTEMOC, his ultimate successor, might have been more suited by his warlike nature for resisting the Spaniards, especially when the latter were weakened as they were at various times.

On a lesser level the possibility of distinction in war or administration left a door open to talent from lower social levels (war was the most important avenue in the earlier stages of the Aztec Empire). In addition there was the opportunity of trade, and members of the merchant class, the *pochteca*, fitted between aristocrats and plebians. In either case it was a further chance for individual distinction, especially if one dealt with long-distance trade. Military-intelligence activity was often combined with foreign business dealings, a practice not unknown in our own day. Middle-class occupations

also were available in the lower-elite specialty jobs in religion, administration, and certain craft specialties, such as jewelry making. Thus, social mobility was based on personal achievement in the several areas open to distinguished conduct.

To summarize, Mexica society was organized, to a great degree, around the *calpulli* and their associated noble houses. This group had landholding, social-security, military, religious, and educational functions. However, this kinship-based unit was only fully in operation in the middle ranks of society. Social strata above and below the *macehualtin* level lacked complete *calpulli* organization, and individuals who had fallen into evil circumstances lost membership. Thus, it was most important to be born a member of a specific aristocratic lineage at the upper levels, in which case one was considered for certain offices and at least had perquisites such as holding private lands. At the lower levels of society it was of little importance to a serf attached to a ruler's estate how an adjacent *calpulli* operated. Such a serf had left or been born outside the *calpulli* system and lacked the rights inherent in *calpulli* membership. Slaves, of course, had dropped out of the *calpulli* system but had not forfeited individual rights, although their labor was entailed.

Aztec society seems to have been moving increasingly toward a rigid aristocratic principle, however, especially under the last Moteczoma, who made it a crime for a commoner to enter the same waiting room in his palace as nobility. There were other moves toward despotism and the establishment of caste. Each member of the state apparatus had a special dress and badges of rank to set him apart. Warriors were given decorations and different uniforms according to the number of enemies they had captured. The warrior societies called Eagles, Jaguars, and Otomís all had special uniforms and fought as units in time of war. At the same time there was a rapid expansion in sheer numbers of the *pipiltin* owing to the fact that they were taking large numbers of concubines. These women were often of commoner (*macehualtin*) origin, but their children assumed their father's rank. On the other hand a *pilli* could not be assured of distinction simply because of birth and might wind up with a very pedestrian administrative job, whereas one of the gray knights could well be placed over him.

Other social categories of people who were at least implicitly recognized were gamblers, thieves, and prostitutes. Gamblers played at the game of *patolli*, a kind of parchesi board game that invoked numerological symbolism tied up with the sacred calendar. Bets were also placed on the outcomes of ball games played with rubber balls in special courts. Thieves are mentioned as being a certain problem, with a criminal band sometimes terrorizing a household and stripping it of its goods. Prostitutes were at least common enough that those young men who had distinguished themselves in war

had the privilege of consorting with them for a short period. Porters, innkeepers, barbers, and beggars fill out the social scene and confirm Tenochtitlan's fully urban status.

Political Organization

In the Basin of Mexico the ultimate unit of political stability was the city-state. Kingdoms and empires all appeared at various times, but these nearly always were reduced down to the city-state or, sometimes, were completely destroyed. The fifty city-states in the basin in 1519 were each ruled by a petty king with all the trappings of royalty. A member of the *pipiltin*, he dwelt in a stone palace with a harem, bodyguard, and court ritual. Such a ruler was known as a *tlatoani*. As was the case with the *calpule*, the *tlatoani* was supported by cultivation of designated communal lands and also received tribute in the form of labor and services. Being a member of the *pipiltin*, he also had landed estates with serfs, and the production was his to dispose of in support of his household or as reward for services. The small estates reverting to the state by the deaths of the temporary nobles and the acquisition of new lands by war gave him immense power to bind the allegiance of talented men to him. However, religious sanctions also bolstered his position, since most of the *tlatoque*-rulers of the basin claimed descent from the divine Quetzalcoatl through the Toltec. For this reason Sanders (1965) has argued that the upper classes of the various communities in the basin formed an endogamous caste. One could not marry beneath one's social class. Women of suitable rank were scarce within any community, considering the incest taboo. The common practice was to exchange women among the ruling lineages. These marriages had political implications and remind one of the dynastic marriages of Europe. Nezahualpilli, king of Texcoco, for an example, was married to Moteczoma II's sister. Such an alliance did not preclude hostilities. Indeed, Nezahualpilli executed his wife for adulterous conduct, although this was partly motivated by a desire for revenge on Moteczoma, who had betrayed the Texcocan army into an ambush. One might compare this system with the circumstances in Europe in 1914 on the eve of World War I: the heads of state of England, Germany, and Russia were then all cousins.

The social and political structure outlined above was the ideal. The reality of the situation depended, as always, on historical circumstance, personality, and the run of fortune. Rules were to be obeyed; they ordered the social universe and, in a sense, reflected the divine order. Larger or smaller units accommodated themselves to special natural circumstances as they also did to the historical circumstances that made them more or less important in the eyes of men. The Aztec had come from very humble beginnings in their rise to domination of the central plateau of Mexico, and the empire was a relatively late political structure, built on already existing patterns

found when they came into the basin. It seems clear that they followed the historically recorded pattern in building their empire. There had been the Toltec empire of the golden age. There had also been another, greater state earlier, whose name and history had been lost but whose institutions had passed into the tradition of the people of central Mesoamerica—the empire of Teotihuacan. Taking this legacy of organizational tools and concepts, the Aztec developed their own features of governance.

An empire, by simplest definition, is a state that includes, under one administrative umbrella, a diversity of peoples in language and culture. Generally, this means that a vast area is dominated, and thus natural diversity is also characteristic. The empires before that of the Aztec had penetrated northward into the barbarian lands of the Gran Chichimeca, where the hunting and gathering peoples of the deserts and mountains lived. Both preceding empires had at least briefly established enclaves of control in the exotic Maya country, both lowlands and highlands. The Toltec and Teotihuacanos had established garrisons and routes of access to far-flung outposts instead of physically controlling all of the intervening country. The Aztec followed this pattern as they expanded outside of the central plateau. They eventually ruled over an area of 200,000 square kilometers (77,000 square miles) and from 5 to 6 million people. To govern this vast area there was an elaborate political apparatus built on the kinship, social, and political principles discussed above (fig. 9-4).

At the top of the Mexica state was dual leadership, religious and military. This reflected the dual hierarchy of offices. Since the state was nearly continuously at war through its later history, the military segment became dominant. The supreme leader was chosen from a special lineage by a set of important men who were members of the *pipiltin* and also heads of state or high officials. Durán says in his *History* (1967) that all of the civil officials attended the election proceedings, but it is quite evident that only the most important had a voice. Brother succeeded brother in the normal order of things. For example, the three sons of Moteczoma I served in succession: Axayacatl, Tizoc, and Ahuitzotl. These four were, in turn, related to the other two great expansionist rulers of the Aztec state, Itzcoatl and Moteczoma II. Moteczoma II was the grandson of Axayacatl. Itzcoatl, who preceded Axayacatl, was the latter's cousin.

The ruler was assisted by a royal court structure consisting of advisors and administrative heads of the various segments of the state. The state was divided into functionally distinct departments: spiritual, military, justice, treasury, and commerce. These were controlled by the court, which acted as the executive branch. The departments were organized internally in a hierarchical manner, with various classes of officials in each. Such a civil service also had its paperwork. "The nation has a special official for every activity, small though it were. Everything was so well recorded that no

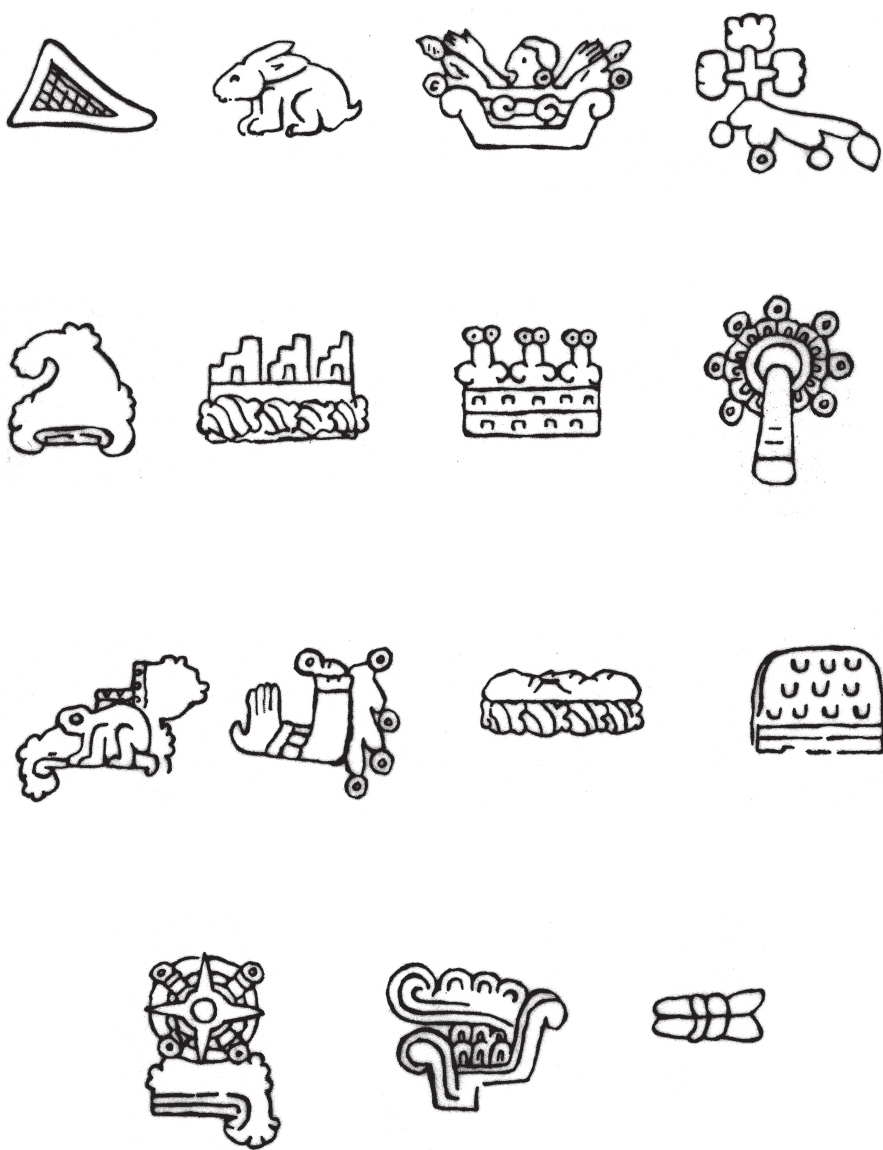


Fig. 9-4. Aztec place-name hieroglyphs from the Stone of Tizoc, which shows the places conquered by that Aztec ruler. The third symbol down in the left-hand column is that of Xochimilco.

detail was left out the accounts. There were even officials in charge of sweeping. . . . And so the officials of the Republic were innumerable” (Durán 1967, 183).

Below the supreme level of government, there was a division of the empire into provinces that represented groups of conquered city-states. There were some thirty-eight of these provinces, but also some so-called independent kingdoms. C. N. B. Davies, in his study of these independent pockets within the empire (1968), came to the conclusion that the Aztec controlled their empire much as the British had administered India. That is, the Aztec controlled key points with garrisons, secured the routes through territories, and arranged for tribute to be paid, but they usually made no effort to otherwise assimilate conquered peoples. Hassig (1985, 92 et passim) has pointed out that the empire was not physically occupied by Aztec armies but was controlled by intimidation, which led to an economy of force. To some degree this type of political system was dictated by the difficulties of transport and communication. Some of the provinces had governors, members of the *pipiltin* class, appointed over them, with garrisons and civil servants to assist them. All provinces had tax collectors. The native ruler was often maintained in power as long as he collaborated. Some “independent kingdoms” were actually less crucial polities and in reality were “protectorates” of the Aztec, with varying degrees of independence. Those on the frontiers of the empire tended to be most independent. An example of this type of buffer state was the trading state of Xicalanco, on the Gulf Coast, between Maya country and Nahuatl speakers. Others, Tlaxcala and Tututepec, were well placed to menace the Aztec lines of communication and were truly independent. However, most, except for Tlaxcala, had been militarily neutralized. The Tlaxcalans became the original and most constant allies of the Spaniards. In the west, the formidable Tarascan army protected its empire and defeated the Aztec in their attempted incursions. At the time of Spanish contact, the Aztec were constantly nibbling away at the territories of the independent kingdoms in an obvious attempt to absorb them into the empire tribute system.

Tribute was regulated by the calendar, and payments were made quarterly, semiannually, and annually. Provinces farthest away from Tenochtitlan made payments less often. However, tribute was always given on certain religious festival days, whatever the frequency.

An example of tribute paid can be seen in the case of a northeastern province in the Huastec region named Tuchpa (Tuxpan today). The province had actually been conquered by Nezahualcoyotl, the famous king of Texcoco. It had a capital town, also named Tuchpa, and seven subdivisions, somewhat like counties, with a total of sixty-eight communities. The bulk of the tribute listed was clothing, much of it very elegant indeed—four hundred cross-striped mantles, for instance. Other tax items listed include

eight hundred loads of dry chiles and two plates made of small turquoise pieces (Berdan and Anawalt 1992, 2:131–34).

Judicial Branch

The judicial branch is a good example of the graded bureaucracy to be found in Aztec political structure. Both aristocrats (*pipiltin*) and commoners were chosen for judgeships, mainly according to their accomplishments and qualities. They were supported by the state.

Such as these the ruler gave office and chose as his judges—the wise, the able, the sage; who listened and spoke well; who were of good memory; who spoke not vainly nor lightly; who did not make friends without forethought nor were drunkards; who guarded their lineage with honor; who slept not overmuch (but rather), arose early; who did nothing for friendship's or kinship's sake, nor for enmity; who would not hear nor judge a case for a fee. The ruler might condemn them to death; hence they performed their offices as judges righteously. (Sahagún 1954, 8:54)

Inasmuch as society was rigidly graded and because there was a partial caste system in effect, a two-level system of courts was necessary to take care of justice at all social levels. The Aztec judiciary seems to have functioned something like the modern European continental system, with its pretrial review, magistrates, and higher courts. Common folk were able to use the lower courts, the *teccalli*, to lodge complaints. The judges acted as magistrates on this level. They decided matters of lesser importance, arrested offenders, and did the preliminary work on complex cases. A careful record of the proceedings of the lower courts was made in hieroglyphic writing by a secretary, which record was then forwarded to the higher court for disposition. Appeals from the lower courts were also sent up for review.

The higher court (*tlacxitlan*), consisting of twelve distinguished judges and the city-state ruler, met each twelve days. This court was responsible for review of cases and decisions on complex cases; it called witnesses and examined testimony; and it was expected to detect miscarriages of justice. Princes and great lords were tried by the *tlacxitlan*. The final decisions and appeals were handled by the ruler.

Offenses were social and ideological, the latter including religious offenses. Sacrilegious people who stole items from temples were tried and, if condemned, were dragged by the throat with a rope and thrown into the lake. Three of the titles of the superior court are also those of religious officials, indicating that higher religious leaders participated in the judicial system (Sahagún 1954, 8:54). Judges were also found in the marketplaces and immediately acted on such matters as false measure or the sale of stolen goods.

Of the ordinary judges, Zorita says: “The Indian judges of whom I spoke would seat themselves at daybreak on their mat dais, and immediately begin to hear pleas. The judges’ meals were brought to them at an early

hour from the royal palace. After eating they rested for a while, then returned to hear the remaining suitors, staying until two hours before sun-down" (1963, 126). Zorita also states that each province was represented in the capital city of the empire by two judges.

Police were appointed by the wards or *calpulli*. Persons accused of a crime and waiting for trial were confined in wooden cages, where they received little or no food and water. When a person was found guilty and condemned, execution was carried out by special personnel appointed by the ruler. Lesser sentences were jailing, mutilation, and slavery.

Even the highest person in society was not exempt from justice. The previously mentioned case involving the sister of Moteczoma II occurred not long before the arrival of the Spaniards. This woman was married to Nezahualpilli, the ruler of the important allied state of Texcoco. However, her extramarital affairs became notorious, and her husband had her tried in 1498, presumably by the *tlacxitlan*, and she and her current lovers were condemned and executed.

Religion and Cosmology

The people of central Mexico generally believed that there had been several worlds before the present one: four "suns," each with different types of inhabitants. Each of these preceding worlds had perished through its own imperfections, and the fifth sun or world, in which people now dwelt, would also perish—through a series of devastating earthquakes. It was not known when this end would come, but it was known that the ultimate catastrophe would occur at the end of a particular calendrical cycle, the fifty-two-year cycle. The famous Aztec calendar stone depicts the four suns that have preceded the present sun, which is in the center of the stone.

The earth was visualized as a crocodile-like monster floating in the primeval sea, the edges of which turned up to support the sky. The heavens were arranged in a pyramidal manner, with either nine or thirteen layers. There were also nine underworlds. All of this was fairly standard Mesoamerica-wide ideology.

A jostling, busy, and generally malevolent crowd of deities made up the Aztec pantheon. Nicholson (1971a, 1971b) has analyzed them in terms of fundamental characteristics, cult themes, and deity clusters, brilliantly bringing some order out of this supernatural chaos. Most deities were invisible and made manifest only in dreams and visions and by other special means. Most gods were in human form, at least in part, and dwelt in the celestial sphere. There were specific underworld deities, and occasionally some others went to the underworld temporarily. The rain gods, the *tlaloque*, resided in particular mountains that generated the rain clouds (fig. 9-5). Mount Tlaloc, in fact and according to some authorities (Aveni among them), seems to be lined up with the former location of the Tlaloc shrine



Fig. 9-5. A page from Codex Borgia, a sixteenth-century book possibly from the Tehuacan Valley. Tlaloc, the rain god, cultivates his fields, in which the sacred corn plants grow.

on top of the Great Temple in Tenochtitlan. A basic conception, again Mesoamerica-wide, was that of multiple aspects of most gods. Creator deities come in pairs and in both sexes. Most gods had four or five aspects that directly related to the four directions and the zenith (the fifth direction). All world directions were associated with different colors. These associations between directions, colors, and aspects of divinities led to such conceptions as the Red Tezcatlipoca of the West, who also took the name of Xipe. The White Tezcatlipoca of the East also was Quetzalcoatl. History and a philosophy of protean existence combined to make special patron relationships with certain sociopolitical units such as city-states, craft groups, or *calpulli*. Huitzilopochtli, the patron god of the Mexica, became extremely important with the rise of the Mexica to power, and, according to R. C. Padden (1967), began to absorb the attributes formerly belonging to other gods, especially the sun.

Three major cult themes pervaded Aztec religion, according to Nicholson. The first, which had to do with celestial creativity and divine paternalism, was the most abstract, poetic, and philosophical segment of the whole body of religious thought. It is to this cult theme that such relatively well-known material as the writings of Nezahualcoyotl, the philosopher-king of Texcoco, belong. The fierce, capricious Tezcatlipoca also belongs in this category. This deity was a supernatural magician, and associated with the things of the night and darkness. "No deity better expressed the pessimistic, fatalistic *weltanschauung* which prevailed in pre-Hispanic Central Mexico. . . . It can be argued that this god, true to his name (smoking mirror), mirrors in his supernatural personality the essential ethos of the whole culture" (Nicholson 1971a, 231).

The second major cult theme had to do with rain, moisture, and agricultural fertility. This cult undoubtedly had deep roots in the past, being so tied to fundamental affairs of life-giving plants, rain, soil, and water. The rain-god complex, Tlaloc and all his helpers, is especially important. Another group of deities clustered about the maguey plant and the fermented cactus juice it produced. One bunch was known as "400 rabbits," which may have been how one felt after sufficient pulque. A whole roster of female deities is also present, many of whom are aspects of rain and water or personifications of the various stages of growth of the maize plant.

The Xipe-Totec complex, dreadful in its sacrificial aspect of flaying the skin of the human victim, was clearly an expression of the idea of death and rebirth, rest and growing seasons. It is thought to have been introduced from the Guerrero area. Many of the female deities of these complexes were represented by the multitudinous small clay figurines made and used in home worship. It might be noted that this practice of figurine making continued into early colonial times, except that instead of Coatlicue, the mother of the gods, the Virgin Mary was depicted. The author has even

found a small figurine of a man on horseback in an early colonial Maya tomb in the highlands of Guatemala in which all the other ceramics were prehistoric in appearance.

Quetzalcoatl, the great patron deity of the Toltec, was a unique deity because he crossed many of the lines drawn above. He was a creator deity, associated with the war-and-blood nourishment cult, and also was conceived of as being a great culture hero. He provided humanity with maize and other gifts. There seems little doubt that here we are dealing with the mythological apotheosis of a historical personage. The story of Quetzalcoatl is taken up in the consideration of the Toltec in chapter 7.

The third cult theme was that of the state-fostered war-sacrifice-blood nourishment of the sun and earth. The justification of human sacrifice was preservation of the very existence of the universe. The sun had to be kept nourished by the blood of victims, or else the end of the world, the fifth sun, would come about. Incessant war was necessary to gain a constant supply of such quantities of victims. The death-god complex was of course an important deity cluster, but so also was Tonatiuh, the sun-god complex. Tonatiuh was the patron of the warrior societies, the eagle and jaguar "knights." Appropriately, both the eagle and the jaguar were symbols of the sun in his various aspects. Huitzilopochtli became the supreme supernatural power in his guise as the god of war. Tezcatlipoca was also important in this group as the patron of young warriors.

There was a basic ritual pattern to nearly all of Aztec religious life. The great spectacles and liturgies were mainly elitist in orientation: most of the many and continuous ceremonies involved only a few members of the state-supported church or, at most, were attended by upper-class members. A ceremony usually started with a preparation by fasting and other abstinences. The main business of the ceremony varied but usually involved offerings, processions, deity impersonations, dancing, singing, mock combats, and human sacrifice. Feasts usually followed, and more secular dancing and singing were featured then.

Ceremonies were both calendrical and noncalendrical. The calendrical ceremonies of the 365-day calendar were called "fixed" ceremonies by the early Spaniards and occurred in each of the eighteen months of the year. The 260-day calendar had "movable feasts," which rotated in relation to those of the 365-day year. Movable feasts were somewhat like the Christian Easter, which shifts in the 365-day calendar according to lunar cycles. Noncalendrical ceremonies were usually tied up with the individual life cycle, crises, homecoming ceremonies, domestic rituals, curing ceremonies, and so forth. Again, many of the small clay figurines so common in the Basin of Mexico were made for curing ceremonies, according to Sahagún. They were also strung over the fields for fertility purposes, according to Durán.

The major ceremonies were, of course, held in the temple precincts, with and under the direction of special personnel, and were patronized by the state and elite leadership. The Spanish friars concentrated upon this part of the religious structure when they engaged in the first generation's massive conversion efforts. Several aspects of Aztec religion seemed especially remarkable to them because of their similarities to Christianity. One such feature was the use of confession of sins among the Aztec, although this was done infrequently. Another parallel was the use of a sacred dough that was often made into an image of a god and ultimately eaten by the participants. The similarity of the concepts of the mother of the gods, Coatlicue, and of the Virgin Mary has been remarked. Indeed the shrine to the Virgin of Guadalupe presently occupies the site of the old center of worship of Tonantzin, an aspect of Coatlicue.

The Aztec felt themselves surrounded by and acted upon by the supernatural. Religion permeated every aspect of life. The gods were in this world and were unknowable and capricious; humans were at the mercy of their whims. The future was perhaps divivable if one knew enough to detect the cycles of time, events, and ritual. Life might be controlled to some degree, or at least foreseen, if one had such knowledge. The small town of Malinalco was noted for its sorcerers and fortune-tellers, some of whom used the device of staring into tubs of water. The calendars were inextricably bound up with life, and one's whole life pattern to a large degree was bound up with one's birthday and its lucky or unlucky aspects.

Small shrines dotted the countryside, much as Catholic shrines are still found in profusion around Mesoamerica today. Shrine worship in the mountains was especially dedicated to the rain gods, the *tlaloque*. Even the emperor and his court repaired at a certain time of the year to a remote and gloomy precinct in a forest on Mount Tlaloc for a ceremony dedicated to the rain god. Long-distance merchants on a trip worshiped their Pinocchio-nosed god, Yacateuctli, asked his protection from the dangers of the trip, and made a temporary shrine to the god each evening with their staves and clay images of the god's face. One still finds these small clay masks as far south as the highlands of Guatemala. The agriculturalist, of course, felt the wrath or beneficence of the gods in all his activities. The *chinampero* had his own patron deities. The breath of cooling air that preceded the rain squall was Quetzalcoatl in his guise as the wind god, sweeping the road before the moisture of the rain god Tlaloc.

The world was mysterious and awful in many ways, but there was an explanation for nearly everything. The universe was in order, and people were meant to help keep that order by proper worship and sacrifices. The regularity and the pageantry and drama of Aztec religion went far to allay anxieties about the essential hostility and unpredictability of the world and served also to bind the commoner's allegiance to the state.

War and Imperialism

Much of what follows is derived from Ross Hassig's study, *Aztec Warfare* (1988). The practice of war by the Aztec has been given a number of constructions that are as nearly divorced from reality as the myth of the "peaceful" Maya. Idealization of the ideological elements, the "sacred war" to save the world and the sun, is a common misconception. Characteristics of the "flowery wars" of the nobility carried out between formally declared wars are sometimes confused as part of the expansionist wars of the empire. Both of these elements were present, of course, but they seem to have been justifications for the real practicality of warfare, the aim of which was to gain tribute payers and tribute for the empire.

The empire, as noted, was loosely controlled physically but held in taut control by intimidation and the perception of overwhelming power. Hassig notes that this made for a great economy of force, just as it did for the British in India, where about 1,600 administrators made things run. In this sort of arrangement no immense standing armies or large numbers of garrisons were needed.

It has been argued that the Aztec had no professional army, but this is basically a matter of definition. Modern armies of industrial states are clearly not the sort of force that the Aztec developed. Neither are the small professional armies of Europe of the seventeenth and eighteenth centuries an appropriate model. Perhaps we may look to the more traditional armies of ancient states, an eighteenth-century survival of which were those of the Maharattas of India.

All Aztec males were militarily trained, either in the *telpochcalli* or *calmecac* schools. Further training was under the tutelage of a more experienced warrior. Social prestige and advancement for both commoner and noble was available through military exploits. However, it was much more likely that a noble would distinguish himself because of his access to better training and because of more military opportunities afforded him. The military societies were graded according to noble or commoner membership. Titles given for achievement were not necessarily equivalent to chain-of-command rank. The military societies were not groups of officers, although nobles made up more of their membership than did commoners. Nobles were not necessarily officers, either. Kinship, social status, military achievement, and personality determined rank, and these elements seem to have occurred in different mixes, all of which made the Aztec armies unendingly fluid and volatile organizations. At any rate, no matter who commanded in a particular campaign or battle, a set of principles governed conduct and made clear the responsibility for all the necessary tasks. War was patterned in its process from inception to conclusion, victorious or otherwise.

Declarations of war were often kept within Aztec society in order to gain surprise in an offensive attack. Efficient mobilization depended on

several elements. One was the existence of a body of trained men, which was provided by the men's schools and military orders. Another element was intelligence, which was gathered by spies, merchants, diplomats, and others familiar in our own day. Communication used for political purposes could also be utilized in time of war. Relay messengers stationed about 4.2 kilometers (2.6 miles) apart passed information rapidly through the empire. Finally, logistics had to be adequate, and these were carefully calculated according to the campaign. Supplies were taken from dumps prepared in advance by tributary towns along the line of march. Armories in Tenochtitlan provided the weapons.

Selected numbers and proportions of nobles and commoners were used in actual combat, depending on the enemy to be confronted. Armies of seven thousand to eight thousand were commonly drawn from a calculated total military manpower pool of perhaps half a million. Only in an emergency, usually a defensive situation, was nearly the whole of the military organization brought into play. Full mobilization occurred during the Spanish Conquest, of course.

The sophistication, courage, discipline, and numbers of the Aztec are repeatedly mentioned in the Spanish accounts of the Conquest. All of these characteristics had been developed during the period of empire building under a series of strong leaders. At first, however, the Aztec did not hold any notable advantages except for the *élan* that they always displayed in combat. At the end they had developed a great army, but one that was more attuned to political expansion for the purpose of tribute rather than for defense. Spanish tactics and weapons, combined with Cortés's strategic genius, finally prevailed.

Historical Summary

Like many imperial peoples suddenly reaching gloriously improved circumstances, the Aztec-Mexica looked back on the past and found it lacking. In fact at one point they went so far as to burn as many of the older history books as were available and then rewrote their own history. Therefore much of what comes down to us is in the form of the official chronicle of the Aztec and is as they themselves wished to be seen. Fortunately, there are other histories that have survived from city-state archives, of Chalco and Texcoco for example, which give us a chance to balance more realistic or different versions against the chest-beating tone of the official record.

The Aztec considered themselves part of a group of seven Chichimec tribes that left a semi-mythical place to the west of Mexico, Aztlan. It is from the latter place-name that "Aztec" is derived. The Aztec were also called Mexica after a famous leader named Meci. All seven tribes eventually arrived in the basin, but the Aztec were the last to do so. After several

generations of wandering and adventuring, following their tribal deity, Huitzilopochtli, they arrived in the Basin of Mexico about A.D. 1193. It is difficult to say exactly what the political status of the Aztec was, but there seems little doubt that it was a politically weak, militarily aggressive, and probably tributary group. Sanders (pers. comm.) has expressed the opinion that the Aztec may have been in the valley all along but had the status of a pariah or outcast ethnic group. In any event, until about 1427 the Aztec barely maintained themselves in this precarious and politically fragmented condition. One group is said to have settled with the civilized people of the venerable city-state of Culhuacan. Another group settled on a rocky group of islets in the western embayment of Lake Texcoco and founded what became the city of Tlatelolco, Tenochtitlan's sister city. The Plaza of the Three Cultures in Mexico City today reveals the remnants of this ancient town.

Tenochtitlan was founded in marshland that belonged to three powerful city-states, Azcapotzalco, Texcoco, and Culhuacan. The Aztec had located the place after many vicissitudes, largely of their own making, when they found the promised sign of the eagle nesting on the prickly pear cactus in the swamp. They built their initial shrine to Huitzilopochtli, who had led them through all of those years. That shrine is probably still buried beneath the earliest temples exposed in the excavations of the Templo Mayor. "Although the wood and stone were not sufficient, the Aztecs began to build their temple. Little by little they filled in and consolidated the site for the city. They built foundations in the water by driving in stakes and throwing dirt and stone between the stakes" (Durán 1967, 23). The city was divided into four districts corresponding to the four world quarters; each district was home to several *calpulli*.

At this point, having established and developed their town to some extent, the Aztec requested a king from Culhuacan. It seems clear that they needed someone of the necessary distinguished genealogy who could lend status to their ruling class; that is, someone who could claim descent from the Toltec. Acamapichtli became king in about 1364, married a Culhuacan princess of Toltec ancestry, and ruled until 1404. During this time the Aztec were tributaries of Azcapotzalco and paid heavy tribute to that city-state. Huitzilhuictl, Acamapichtli's successor, married a daughter of the ruler of Azcapotzalco and thereby gained a means of reducing the onerous tribute due Azcapotzalco. The daughter begged her father to remit the taxes, and he agreed to do so.

During these years the Aztec made a distinct effort to live in peace with their more powerful neighbors, establishing amicable relationships with them by inviting people from other city-states to settle in Mexico City. On the other hand, they also served as mercenaries and established a reputation as fierce and skillful warriors. Commerce was also encouraged, with

much coming and going among the various regional markets of the basin, and that of Tlatelolco–Mexico City became more important. About 1417 the third king, Chimalpopoca (Smoking Shield) took office upon his father's death and continued the peaceful development of the city.

After about ten years, a crisis took place that threatened the very existence of the Aztec as a separate state. More water was needed for the increasingly large *chinampa* zone and the growing population of the city, and an aqueduct-causeway was planned and attempted. However, the Aztec needed help and requested it of Azcapotzalco. Whether or not the request was actually insolently phrased, it was said to be, and Azcapotzalco took this incident as a good chance to destroy a growing rival. Azcapotzalco sent assassins, who killed Chimalpopoca and his son and then instituted an economic blockade. At this point the first of the great conqueror-kings ascended the throne and the ferocious personality of Tlacaelel made its appearance. The new king, Itzcoatl, aided by his nephew, Tlacaelel, first resisted and then, with the immense help of Texcoco, conquered Azcapotzalco. For the first time the Aztec were an independent city-state, free of tributary obligations. Itzcoatl was the first of six rulers who presided over Aztec imperial expansion. According to some sources, Tlacaelel was first general and then chief counselor to all but Moteczoma II, the next to last pre-Hispanic ruler. In point of fact Tlacaelel was emperor-ruler in all but name for most of his lifetime. The Aztec state and its ultimate form, ideology, social structure, and accomplishments are very much the achievement of this extraordinary personality. It was Tlacaelel who planned and at first largely carried out the military campaigns that subjugated the basin for the Aztec and who then spread the empire beyond the basin. Tlacaelel, according to Padden's interpretation (1967), was also responsible for the psychopathic emphasis on human sacrifice as an instrument of terror and political and social control. However, this interpretation is disputed by other scholars, who see Tlacaelel as much less influential (cf. Hassig 1988, 189). A. A. Demarest has more recently developed this theme in an anthropological context and argues that the real difference between the Aztec and the other central Mexican cultures was ideological (Conrad and Demarest 1984). By this means he claims to have put the element of human volition (stimulated by an ideology) back into evolutionary explanations. Undoubtedly this factor has been underestimated, but an ideological base without a solid economic base is not a long-term winner in competitive situations, as shown by the Japanese-American war of 1941–45. The situation was nothing if not competitive in fifteenth-century Mesoamerica.

A balanced treatment of cultural evolution probably means that economics and ideology will be found to be interactive in most cases. The use of the land of the conquered city-states by the Aztec relieved their hunger, and the tribute exacted from the same conquered places provided the economic

support for the rapidly expanding aristocracy (*pipiltin*), bureaucracy, and church. Much of the expenditure of the state was in the form of extravagant building: glorious architectural monuments that embellished the capital city and provided the physical stage upon which the pageantry of social and religious (ideological) activities were acted out.

The above reconstruction of Aztec history is almost wholly derived from the official version. However, according to other city-state chronicles, the initial struggle with Azcapotzalco was successful only because of an alliance with two other city-states, Texcoco and Tacuba. Texcoco was the home of another extraordinary personality, the ruler Nezahualcoyotl, who was also an accomplished engineer and warrior. It appears that much of the initial domination of the basin and the Central Plateau of Mexico was due to this man's achievements. However, it also appears that the Aztec expurgated the history books to omit both the historical and cultural accomplishments of the rival city of Texcoco. Unfortunately, the great library of Texcoco was destroyed in the course of the Spanish Conquest.

It seems quite clear that shifting power balances among the allies of the basin took place within the century of Aztec expansion, A.D. 1427–1519. Although Texcoco retained its reputation and eminence in cultural achievements, it had become politically and economically subordinated to Tenochtitlan by the late fifteenth century.

Padden argues that the Aztec state by that time had also become a mad world of bloody terrorism based on the cynical, psychopathic policies of the high imperial rulers. Coronation ceremonies of the later kings were accompanied by the offering of fantastic quantities of human victims to the gods. These victims were purchased slaves from Aztec society itself, coerced members of a society who played the parts of god impersonators as well as the collected captives from the constant foreign campaigns of the Aztec armies. Some eighty thousand captives are said to have been sacrificed at the dedication of the enlarged Great Temple housing Huitzilopochtli in 1487. While that is probably an exaggerated figure, it was undoubtedly horrifyingly large. Incredibly, the Aztec elite invited rulers of hostile states to view the spectacle as honored guests—"enemies of the house." The consumption of human flesh by the *pipiltin* has been argued to have been massive, and it is said that one reason pork was so popular after 1521 was its similarity in taste to human meat. The expansion of the *pipiltin* class, the increasing tribute loads on the *macehualtin*, the growing strains of ever more far-reaching military campaigns, and the increasing hostility of the conquered provinces all produced internal and external strains on the empire that set the stage for its fall in 1521 (Padden 1967).

Tlacaelel died in 1496, and Moteczoma II came to power in 1503. The latter had ascended the religious route to supreme authority. He moved

almost immediately to deify himself. Durán (1964) records that he asked an old man what the emperor Moteczoma looked like, and the old one replied that he in truth did not know, not having dared to look on Moteczoma's face. Much of the later majesty, elaborate protocol, and almost Byzantine court procedure were Moteczoma's creation. He arranged for the assassination of most of the court officials who had served his predecessor, Ahuitzotl. Those men knew too much to accept his divinity.

The king of Texcoco, Nezahualpilli, became an enemy—covert, but powerful. He made dire predictions, moreover, about the end of Aztec hegemony; it would come within a few years, he said, although he himself would not see it. Whether or not this was psychological warfare, it certainly upset Moteczoma. Many other upsetting events occurred in the years shortly before the appearance of the Spaniards. A bird with a mirror in its head was brought to the emperor, who gazed into it and saw first a starry constellation and then men on horses. A fire broke out in a temple dedicated to Huitzilopochtli, and it burned to the ground. A great comet was seen in the sky. These and other omens reminded Moteczoma of the now-dead Nezahualpilli's prophecy and also of the ancient traditions that the god Quetzalcoatl would one day return or send his sons back to reclaim his patrimony. The appearance of Spanish exploring vessels in the period 1507–10 greatly alarmed the empire's rulers.

The extraordinary story of the conquest of Mexico by Cortés and how it was aided by the psychological preparation mentioned above and by the internal stresses of the Aztec system are well known. It took Cortés only two years to reduce the Aztec to slaves and their marvelous city to malodorous rubble. As much as cultural and political destruction figured in the Conquest, there was a horrific population loss during the Conquest period and for the next 160 years of the colonial era. It is estimated that the Indian population of the basin was reduced from about 1.2 million in 1519 to some 70,000 by 1680. This was accomplished by numerous causes: war, slavery, diseases, overwork, malnutrition, and famine. The basin was not alone in suffering this process. It is estimated on good grounds that the total population loss in Mesoamerica during the same period was on the order of 85 to 95 percent in some areas (S. F. Cook and Borah 1960).

The Spaniards retained the collaborating native elites for the first part of the colonial period. However, increased tribute, reduced populations, and depressed economic conditions rapidly reduced these descendants of the *pipiltin* to poverty-stricken remnants hardly distinguishable from their former vassals and serfs. One wonders if the sadness and bitterness of the worldview of much of Indian culture today in the highlands is not the legacy of this disastrous past, which has not yet been fully redeemed.

They have been destroyed by the great and excessive tribute they have had to pay, for in their great fear of the Spaniards they have given all they had.

Since the tribute was excessive and continually demanded, to make payment they sold their lands at a low price, and their children as slaves. When they had nothing left with which to pay, many died for this in prison; if they managed to get out, they emerged in such sorry state that they died in a few days. Others died from being tortured to tell where there was gold or where they had hidden it. They have been treated bestially and unreasonably in all respects. (Zorita 1963, 207)

APPENDIX A

EXPLANATORY AND ANALYTICAL TOOLS FOR UNDERSTANDING THE PAST

THERE IS NO intention in this section of being original. Indeed, the aim is just the opposite: to be unoriginal. That is, I mean to outline the commonly accepted theoretical and analytical patterns. Therefore, most of the material presented here is standard, used by most archaeologists in part or as a whole. This statement applies to the the “new” archaeologists and to the “pragmatists.” The distinction is one that is most often insisted upon by the “new” archaeologists, who consider themselves explicitly committed to the “scientific” method or the hypothetico-deductive system of research. The rest of the profession, which is not so specifically committed and is willing to use anything that comes to hand, I have grouped into a loose category under the label “pragmatists.” Wishing to avoid the polemics that have often characterized the debate between the two groups, I shall do no more than refer the reader to a few articles and books that outline the distinctions in more detail. I cannot refrain from one comment, however, and that is that most of us do not take professional epistemology as seriously as we do our religion, unless they happen to be the same.¹

There are three elements with which an archaeologist deals. These are time, space, and content. A multitude of structures of hierarchically organized units is concerned with each of these qualities. These elements give us some control over the materials, and with them many inferences are possible and testable. Without such control, nothing is certain. We will consider time first.

Time. Relative and absolute time distinctions are important. The former can be determined by means of the most useful field technique ever developed: stratigraphy, a principle borrowed from geology. Simply stated, stratigraphy means that physical deposits and the cultural materials they contain can be ordered by their physical ordering as found in excavation. This

1. The literature on the “new archaeology” versus the traditional or pragmatic archaeology is long and acrimonious. Some major statements can be found in Binford and Binford (1968) and in Fritz and Plog (1970), and a comment is in R. E. W. Adams (1969) from a Mesoamericanist point of view. A fuller and more recent statement with explicit research design elements is in R. E. W. Adams (2000). Watson, LeBlanc, and Redman (1971) strike a more moderate stance, although still avowedly “scientific.”

means that the latest deposits are on top and the earliest on the bottom of a pit. There are many permutations to the technique, but that is the essence of it, and with it one can establish relative time. The lowest material in a pit thus is usually the oldest, the highest is the youngest, and the order of the rest of the materials—say, pottery—falls in between in the order indicated by the deposits. By this, then, we can determine that pottery type 3-R is more recent than type 7-X and that both come before type 2-A.²

Absolute time can be inserted into the relative time sequence by the use of several sources of information. History may aid us, as do native calendars such as the Maya calendar. However, physical science has provided us with the majority of independent checks on the absolute dating of archaeological materials. Carbon 14, thermoluminescence, obsidian hydration, tree-ring analysis, and other wonderful and arcane techniques lead to dating.

Content. This comprehends all of the various items and kinds of information that an archaeologist digs up. At the most basic, it means artifacts and their contexts. Artifacts are classified further according to style. Thus, we have stone, bone, antler, pottery, textiles, basketry, wood, and other classes of artifacts. Within these classes, there are taxonomically or descriptively organized units. For example, red-slipped pottery makes up a large amount of the ceramics in the Maya Lowlands. This is distinguished by the kinds of forms, color variants, surface decoration (punctuation, incision, and so on), wall thickness, tempering (grog) qualities, and other characteristics. Thus, a type such as Sierra Red has a certain range of forms and associated qualities that distinguish it from all other red pottery specifically and all other pottery generally. By stratigraphic means, it is known that Sierra Red occurs before polychrome pottery decoration is developed and after the height of white slipped pottery's popularity. This constitutes the establishment of relative dating. Similarly, one classifies other kinds of artifacts and associated information such as house types, art styles, estimated population sizes, and so on. By these means one arrives at an organized inventory of the entire material content of a particular place at a particular time.

Space. It is obvious that all of the above types of artifacts are specifically located in space. One digs at a site or a series of sites and, together with the data from one's colleagues or predecessors, the distribution of Sierra Red pottery and associated materials allows one to draw rough boundaries on a map. Thus, for example, we know that Sierra Red is most common in the Maya Lowlands but also occurs in the Chiapas Lowlands. Further, stratigraphy has repeatedly shown that these types occur at about the same time.

2. For more on the technical and theoretical aspects of fieldwork, see Hole and Heizer (1973) and Hester, Heizer, and Graham (1975).

Synthetic Units. It is obvious that ancient peoples did not use just one type of pottery at any one time. Usually there were up to twenty types of pottery in use simultaneously. Once one has established the contemporaneity of a group of pottery or lithic or wooden artifact types, then one has established a ceramic, lithic, or wooden artifact complex. Putting all of the contemporary complexes together defines the entire known artifact inventory of a particular place at a particular time. At this point one has the necessary information for the establishment of that most useful of all archaeological units, the phase. The phase is the unit in which all three elemental qualities (time, space, and content) are combined. A phase is defined as a distinctive body of content located in a specific place (or region) and with a specified length of duration. It follows that all phases are not of the same length. Depending on circumstance, the archaeologist makes the phases as short as possible, but they may range from one thousand years to twenty.

A series of such phases constitutes a sequence. Sequences are often referred to in this book, and they usually mean sequences at a particular site, but sometimes they are region-wide, as is the case with the Tehuacan phases. The problem is obviously one of sampling, and indeed, as I have said in another context, archaeology can be viewed as a kind of grand sampling game. Usually, the archaeologist is dealing with only a 1 to 2 percent sample at best, and often the excavated material from a site is far less than that proportion.

Archaeological reconnaissance over large zones can extend our knowledge. Surface collecting of pottery and other artifacts and test pits at other sites may greatly expand the site or regional sequence. Cross-tying regional sequences into larger sequence is accomplished by the use of horizons. Horizon styles are widely spread in space but fairly short-lived in time. For example, the Mixteca-Puebla style is a Protohistoric example from Mesoamerica, while the widespread use of slab-footed, tripod, cylindrical vases with lids is an example for the Teotihuacan period. By these means and absolute dating, large stages, developmental epochs, are established with roughly contemporary events from all over the Mesoamerican area.

The specific meanings of these stages and periods are discussed in chapter 1. However, it bears repeating here that periods are regarded as simply large blocks of time applicable to all of Mesoamerica, and they have no specific evolutionary or culture-historical implications.

Levels of organizational development. Certain terms are used in the body of the book to refer to levels of complexity in social, political, and economic organization. Most of these are derived from the general body of ethnological theory. There are several problems with these labels, however. One is that there is no stable agreement about what constitutes a tribe, say, across all world culture areas. Therefore, one cannot automatically

say that tribal level of organization in the Tehuacan valley at a specific time meant that it had all of the same characteristics that have been cross-culturally defined for us by such scholars as Murdock and Service (1962).³

Furthermore, there is a problem with the differences between the nature of archaeological evidence and the character of definitions based on ethnological data. Sanders and Price (1968) have ably discussed this matter. Ethnologists tend to deal with nonmaterial evidence derived from observation of living societies. Archaeologists are constrained to deal with a fragment of the material remains of extinct societies. Therefore, any statements about social organization of archaeological cultures are usually and mainly inferential, and consequently there is an obvious incongruity in the nature of the two sets of organizational labels. A partial solution to the problem would be to pay more attention to the material correlates of organizational levels of living societies. However, there is another problem, and one that is more fundamental. Our ethnological record is small in sample and somewhat uneven in quality. Further, it is largely, although not entirely, confined to the past one hundred years of anthropological work. For these and other reasons, the resultant cross-cultural and universalistic categories of social organization may well be inappropriate to apply to the archaeological cultures of the past.

The early cultures must have gone through many stages that were only relatively fleeting and unstable. However, the peculiarities of these transitional stages may have had lasting effects on the later stylistic and functional characteristics of developed cultures. For example, the Olmec culture arose in a world largely free of the intense competition that the later Mixtec states faced. The Olmec may be regarded as a form of "pristine state," one which was by nature transitory. However, as we now see it, certain crucial features of Olmec social organization may have been perpetuated in Classic Maya civilization, lasting until the collapse at about 900 A.D. For these reasons, then, it is proposed here that archaeologists must eventually work out their own typologies and sequences of social organizations that will be largely independent of ethnological categories. The matching of archaeological and ethnological categories would be a still further and comparative step toward understanding of both conceptual frameworks.

The new data from almost all of Mesoamerica indicate that the sequence of community development was: village to regional center to ceremonial center and/or urban center (city). These archaeologically detectable entities indicate the increasingly complex nature of Mesoamerican societies. On the other hand, the question is left open for a parallel interpretation as to the nature of the society represented by the site.

3. Service (1962) and Sanders and Price (1968).

In the meantime, however, we are left, at least for the purposes of this book, with a terminology derived from ethnology that carries a load of possible misinformation. In Elman Service's (1962) terminology the evolutionary scale runs from band (simplest) to tribe to chiefdom to primitive state. In a sense, the definitions of these levels are too detailed, with the kind of evidence extremely unlikely to show up in the archaeological record. On the other hand, they are not refined enough to take account of the apparent variation in the crucial transition stages of passage from the chiefdom to the state or from the tribe to the chiefdom. A useful distinction can now be made in the archaeological record between *simple chiefdoms* and *complex chiefdoms*, as the reader will find in chapters 3 and 4. In practice, it is often exceedingly difficult to distinguish between villages inhabited by people organized into tribes and those organized into chiefdoms or even states. Therefore, the reader will often encounter terms such as *village-oriented society* as a euphemism that leaves open the social organizational possibilities.

APPENDIX B

GUIDE TO PRONUNCIATION

THE READER WHO is confronted with the names of Mixtec (MEESH-tek) or Aztec deities is liable to be dismayed at first sight. This guide is intended to allay that sinking feeling. However, there is no substitute for buckling down, slowly taking apart some words, and getting something of the verbal rhythm of those rich languages. If this book is used in a classroom the student will, at the least, be able to make a connection between the written word and the word as it is spoken by his or her instructor.

The reader may find some solace in the fact that the first Spaniards had an equally difficult time with Nahuatl, the Aztec language. Indeed, most of them never did master it, judging by the book written by that old conqueror, Bernal Díaz. Huitzilopochtli, the principal Aztec deity, became Huichilobos in many sixteenth-century Spanish accounts.

Sixteenth-century Spanish was different from modern Spanish and had an *x* used to represent a *sh* sound. Thus, Tlaxcala is Tlash-KAH-lah, and Texcoco is Tesh-KOH-koh. Xaltocan is Hal-TOH-kahn today, but in pre-Conquest times was Shal-TOH-kahn. The letter *a* is nearly always long, as in *ah*, and all other vowels are long, as with *i* being pronounced *ee*, as in Huitzilopochtli (Weet-see-low-POCH-tee). Nahuatl words are not accented except in the case of those that end with *e*. Because of the fact that Spanish speakers are our major sources for Nahuatl, it has become customary to stress the penultimate syllable, as in Spanish. Thus, Xochimilco is Shoh-chee-MEEL-koh, and Tenochtitlan is Tay-noch-TEET-lahn.

In Maya the accent is often on the last syllable, as in Chichen Itza (Chee-CHEN Eet-ZAH), or Becan (Bay-KAHN). The *x* in Maya words is nearly always pronounced *sh*, as in Iximche (Eesh-eem-CHAY). A *U* on the beginning of words takes the place of a *w* sound in English, as in Uaxactun (Wah-shock-TOON).

Mixtec words are complicated by the use of the Spanish tilde (~) over some *ns*, indicating a *y* sound; thus, Yucunñudahui is Yoo-koon-yoo-dah-WHEE, and Nuiñe is NYOO-een-yea. The reader may take some small comfort from knowing that at least he or she is not required to pronounce Parangaricutirimicuaró.

Examples of many of the most commonly encountered deity and place-names follow.

Maya Deities*Written*

Ah Kin
 Ah Puch
 Bacabs
 Chac
 Ek Chuah
 Hunab Ku
 Itzamna
 Ixchel
 Kinich Ahau
 Kukulkan
 Xamen Ek
 Yum Cimil

Pronounced

Ah Keen
 Ah Pooch
 Bah-KAHBS
 Chahk
 Eck Choo-AH
 Hoo-NAHB Koo
 Eet-zahm-NAH
 Eesh-CHEL
 Kee-NEECH Ah-HOW
 Koo-kool-KAHN
 Sha-MEN Eck
 Yoom Kee-MEEL

Nahuatl Deities

Coatlicue
 Huitzilopochtli
 Mixcoatl
 Quetzalcoatl
 Tezcatlipoca
 Tlaloc
 Xipe Totec
 Xochipilli
 Xolotl

Ko-ah-TLEE-kway
 Weet-see-low-POCH-tlee
 Meesh-KOH-ahtl
 Kayt-zahl-KOH-ahtl
 Tez-ca-tlee-PO-ka
 TLAH-lohk
 SHEE-pay TOH-teck
 Sho-chee-PEEL-lee
 SHOH-lohtl

Western Mesoamerican Place-Names

If names have changed, the original version is given in parenthesis.

Aztlan
 Azcapotzalco
 Cempoala (Cempohallan)

AHS-tlan
 Ahz-ka-po-TZ AHL-koh
 Sem-po-WAHL-ah
 (Sem-po-WAHL-lan)

Cholula (Cholollan)

Choh-LU-lah
 (Choh-LOL-lan)

Chupicuaro
 Coxcatlan
 Cuicuilco
 Malinalco
 Popocatepetl
 Santa Isabel Iztapan
 Tajín
 Tamuin

Choo-PEE-kwar-oh
 Kosh-KAH-tlan
 Kwee-KWEEL-koh
 Mah-lee-NAHL-koh
 Poh-poh-kah-TAY-petl
 Eez-TAH-pahn
 Tah-HEEN
 Tah-MOO-een

Tehuacan	Tay-WAH-kahn
Tehuantepec	Tay-wahn-TAY-peck
Tenayuca (Tenayocan)	Tay-nah-YUC-ah (Tay-nah-YOH-kahn)
Tenochtitlan	Tay-noch-TEE-tlan
Teotihuacan	Tay-oh-TEE-wah-kahn
Teotitlan del Rio	Tay-oh-TEE-tlahn
Tepexpan	Tay-PESH-pahn
Tequixquiac	Tay-KEESH-kee-ahk
Tilantongo	Tee-lahn-TOHN-goh
Tlatelolco	Tlah-tay-LOHL-koh
Tlatilco	Tlah-TEEL-koh
Tula (Tollan)	TOO-lah (TOL-yan)
Tzintzuntzan	Tzeen-tzoon-TZAHN
Valsequillo	Vahl-say-KEEL-yoh
Xochicalco	Shoh-chee-KAHL-koh
Xochimilco	Shoh-chee-MEEL-koh
Zacatenco	Zah-kah-TEN-koh

Eastern Mesoamerican Place-Names

Acanceh	Ah-kahn-KAY
Chiapa de Corzo	Chee-AH-pah day KOHR-zoh
Chichen Itza	Chee-CHEN Eet-ZAH
Chixoy River	Chee-SHOY
Dzibilchaltun	Dzee-beel-chahl-TOON
Holmul	Hohl-MOOL
Iximche	Eesh-ecm-CHAY
Jaina	High-NAH
Kaminaljuyu	Kah-mee-nahl-hoo-YOO
Kohunlich	Koh-hoon-LEECH
Nebaj	Nay-BAH
Oxkintok	Osh-keen-TOHK
Palenque	Pah-LEN-kay
Quirigua	Kee-ree-GWAH
Seibal	Sigh-BALL
Uaxactun	Wah-shock-TOON
T'ho	Tuh'HOH
Usumacinta	Oo-soo-mah-SEEN-tah
Uxmal	Oosh-MAHL
Xunantunich	Shoo-nahn-too-NEECH
Yaxchilan	Yash-chee-LAHN
Zaculeu	Zah-koo-LAY-oo

Maya Manuscripts

Chilam Balam of Chumayel	Chee-LAHM Bah-LAHM
	Choo-mah-YELL
Popul Vuh	Poh-POL Vooh

APPENDIX C

COMPARISON OF DAY NAMES AND THEIR MEANINGS FROM VARIOUS PARTS OF MESOAMERICA

(after Caso 1967 and Thompson 1950)

<i>Mexica</i> (<i>Tenochtitlan</i>)	<i>Lowland Maya</i>	<i>Zapotec</i>
1. Cipactli (crocodile)	Imix (earth monster)	Chilla (crocodile)
2. Ehecatl (wind)	Ik (wind)	Quij (arm)
3. Calli (house)	Akbal (darkness)	Guela (night)
4. Cuetzpallin (lizard)	Kan (ripe maize)	Ache (lizard)
5. Coatl (serpent)	Chicchan (serpent)	Zee (serpent)
6. Miquiztl (death)	Cimi (death)	Lana (black)
7. Mazatl (deer)	Manik (hand)	China (deer)
8. Tochtli (rabbit)	Lamat (Venus)	Lapa (rabbit)
9. Atl (water)	Muluc (water)	Niza (water)
10. Itzcuintli (dog)	Oc (dog)	Tella (dog)
11. Ozomatli (monkey)	Chuen (monkey)	Loo (monkey)
12. Malinalli (grass)	Eb (bad rain)	Pija (drought)
13. Acatl (reed)	Ben (growing maize)	Quij (reed)
14. Ocelotl (ocelot)	Ix (jaguar)	Geche (jaguar)
15. Cuauhtli (eagle)	Men (moon/eagle)	Naa (eagle)
16. Cozcaquautli (vulture)	Cib (wax)	Loo (crow)
17. Ollin (earthquake)	Caban (earth)	Xoo (earthquake)
18. Tecpatl (flint knife)	Etznab (knife)	Opa (cold)
19. Quiauitl (rain)	Cauac (storm)	Ape (cloudy)
20. Xochitl (flower)	Ahau (lord)	Lao (flower)

GLOSSARY

AGUADA. A waterhole, most often in the Maya Lowlands. A shallow, weedy rain catchment that may dry up between rainy seasons. An *aguada* often was improved in ancient times by deepening and lining with clay and stone.

ALTARS. Stone monuments, which may be sculpted, usually round, found commonly in nearly all regions of Mesoamerica within urban or ceremonial centers. An inaccurate name for what probably were thrones.

AMARANTH. A small-seeded, bushy plant now considered a weed in most of the United States but prehistorically harvested by New World groups, including many Mesoamerican societies.

ATLANTEAN FIGURES. Carved human figures in the form of large or small columns. These may hold up roofs (as at Tula) or low table-altars (as at Chichen Itza). They are mainly of the Toltec period.

ATLATL. A spearthrower device, very ancient and spread throughout the New World. Operates as an extension of the arm and as a lever, pushing the butt of the spear's shaft, thus increasing accuracy, length of throw, and striking power.

ATOLE. A corn gruel, nourishing and palatable, used widely in ancient and modern Mesoamerica. Used especially for infants and the elderly because of its easy digestibility.

BACKFRAME. A wooden frame strapped to the back of a person to which were attached feathers and other symbolic and ornamental items. Usually part of elaborate elite-class costuming.

BAJO. A periodic swamp in the Maya Lowlands. Up to 42 percent of the lowlands in the south is covered with such low areas, which fill with water during the rainy seasons. *Bajos* possibly were once shallow lakes that silted in due to erosion during the Maya Classic period.

BAKTUN. A period of 144,000 days, or about four hundred years, in the Maya long-count calendar. The original Maya term for this period is unknown.

BALL GAME. A game played throughout Mesoamerica with a solid rubber ball in a formal court. Rules and courts varied, but generally the game was used for divination, with the future indicated by the outcome. It was also recreational, with gambling on the game's outcome. Earliest ball courts date from Chiapas about 1200 B.C. Most popular among the Classic Maya, to judge from the number of courts, although the Toltec were also addicted to it.

- BIOME.** Broadly defined as a whole community of plants and animals; for example, a temperate deciduous forest or a tropical rain forest. Each *biome* is made up of many specifically adapted biotic communities. Usually, these communities contain a great deal of variation, as discussed in the section on development of agriculture.
- CACAO.** Beans of the cacao tree (*Theobroma cacao*), used to produce chocolate. Native to Mesoamerica. This tree grew especially well on the wet, hot Pacific coasts of the Maya area, split between what are now Guatemala and Mexico.
- CALDERA.** A volcanic crater.
- CALENDAR ROUND.** A shortened form of date that gives the day within the 260-day almanac and within the current 365-day calendar. However, these dates repeat themselves each fifty-two years. The Maya developed the long count in order to specify time more exactly.
- CALICHE.** Secondary calcium carbonate deposit usually found in lower soil zones and precipitated out of groundwater or irrigation waters.
- CALMECAC.** Aztec school for young men and women of the nobility. These schools were attached to specific temples.
- CALPULE.** The head of a **CALPULLI**. A principal duty of the *calpule* was as custodian of the land maps of the *calpulli*. He reported to the city-state ruler.
- CALPULLI.** The Aztec social-residential unit, which had landholding, military, labor, religion, and political functions. Patrilineal clans.
- CANDELERO.** A small, usually crudely made incense burner found in quantity at Teotihuacan. Associated with the apartment compounds and therefore assumed to have been part of home worship.
- CAUSEWAY.** A raised road of stone. Aztec causeways were dikes and roads through the lakes. Maya causeways, or **SACBES**, were elevated roads across land, swamp, and lake.
- CELT.** A form of small stone axe, commonly as a manufactured item from pre-Olmec times on. Usually highly polished. Often a sacred item.
- CENOTE.** The Maya term for a sinkhole; a solution cavity in the limestone area of the Maya Lowlands where the bedrock has collapsed and exposed the water table.
- CEREMONIAL BAR OR STAFF.** Bars or staffs that are usually richly ornamented and that apparently served as symbols of authority among Mesoamerican rulers. Equivalent in function to scepters of European rulers.
- CEREMONIAL CENTER.** Synonymous with “regional center.” A collection of temple, administrative, and elite-residence structures that served as the focus of a dispersed urban center. Most of the population lived out in the country and congregated in the ceremonial center for markets and religious and political events. Centers were once and mistakenly thought to be characteristic of Olmec and Maya cultures. At least the latter are now known to have had true cities. Probably characteristic of all Mesoamerican Formative cultures. Small regional centers dominated the Early Formative, and some grew into

- large regional centers that were the cores of early cities (for example, Mirador) or foci for early complex cultures (for example, Chalcatzingo).
- CHAC MOOL (CHACMUL, CHACMOL). Literally, “red tiger.” Actually, a stone sculpture of a reclining human figure with an offering plate on the stomach. These figures are characteristic of Toltec-period culture and sat in front of temple doorways to receive initial offerings.
- CHAPALOTE. A primitive type of popcorn still grown in Mexico. The early wild corn found in the Tehuacan caves is *chapalote*.
- CHAPAPOTE. Bitumen, an asphalt-type substance found in the Olmec lowlands and apparently used by Olmec commoners (Wendt 2003).
- CHIAN. A bushy plant of the *Salvia* family that produces seeds. Used by the ancient Mesoamericans for oil and as a drink.
- CHICHIMECA (GRAN CHICHIMECA). The northern mountain and desert lands beyond the limits of Mesoamerican civilization and inhabited by so-called barbarians. In reality the inhabitants were a mixture of nomadic hunting-gathering groups, intermittent and marginal farmers, and farming communities. Interspersed among them were Mesoamerican trading and mining colonies. The Aztec and other Mesoamericans originally may have been Chichimec immigrants from the north and west.
- CHICLE. Sap from the zapote tree in the Maya Lowlands is boiled down to make chicle, the ingredient in chewing gum that gives it “bounce.”
- CHINAMPA. An agricultural field developed by swamp drainage, extensive irrigation, or filling operations along the edges of lakes. A form of raised or drained field. It is especially characteristic of the Basin of Mexico but also found elsewhere in the central highlands, and it is one of the most productive of all intensive agricultural techniques developed in ancient Mesoamerica.
- CHULTUN. Underground bell-shaped chambers dug in ancient times in the Maya Lowlands. Through experimentation, the multiple-chambered types possibly were storage places for ramon (breadnut tree) nuts or smoked corn. Some examples in northern Yucatan (especially the Puuc Hills region) hold as much as 19 kiloliters (5,000 gallons) and are lined with stucco for use as cisterns.
- CLOISONNÉ. Decorative technique by which a surface zone of a clay pot is scraped away while the pot is still soft. The zone is then filled with colored paint, and with differing zones and differing colors, complex designs are created. The technique is especially characteristic of western Mexico and the Toltec period.
- COA. A wooden, spadelike instrument used in the Valley of Mexico and the central highlands generally for cultivation of fields.
- COATEPANTLI. Literally, “serpent wall.” Both Toltec Tula and Aztec Tenochtitlan had such walls, which set apart the ceremonial precinct from the rest of the civic structures. In both cases the wall was decorated with serpents.
- CODEx. A hand-drawn manuscript. In Mesoamerica, a screen-fold illustrated book of indefinite length, made of either native paper (*amate* bark) or

- animal skin, lightly coated with plaster. Used for historical, religious, and tribute information, codices were made both prehistorically and for a short time after the Spanish Conquest. See also LIENZO.
- COMAL. A flat griddle made of pottery for the express purpose of cooking tortillas or flat, thin cakes of corn flour.
- CONVERGENCE. A phenomenon wherein two unrelated complex cultures independently develop similar features. These features are usually stylistically similar but functionally different; for example, wheels used on toys in Mesoamerica and wheels used on carts in the Old World.
- COPAL. Maya word for incense made from pine resin. Used extensively in ceremonies throughout Mesoamerica and still in use in the Maya Highlands in religious affairs.
- COPROLITE. Dried-out (human) feces. Often found in cave sites and useful for laboratory analysis of prehistoric diet.
- CORBELED VAULT (ARCH). Vault made without the use of the keystone principle. It is constructed by erecting two parallel stone walls and then gradually edging parallel courses of stone out toward one another until the space can be closed by a single capstone. In general, the technique was confined to the Classic Maya.
- CORD MARKING. Pottery decoration technique achieved by wrapping a paddle with string. The soft clay of the unfired pot is patted with the paddle, and the string leaves the twisted marks of itself.
- DANZANTES. Bas-relief sculptures from Monte Alban, Oaxaca, dating from the period of about 500 to 200 B.C.
- DIFFUSION. Anthropological concept in which it is assumed that complex inventions or ideas are only likely to be invented once. The diffusion or spread of such ideas and inventions can be traced archaeologically.
- EARSPOOLS OR EARPLUGS. Both terms refer to jewelry or decorative items commonly worn by both male and female elite-class Mesoamericans in pierced ears. Jade, feathers, gold, copper, and other materials were used.
- EMBLEM GLYPHS. Glyphs in Maya writing that identify cities or the ruling lineages of those cities or a political region.
- FRESCO. Used synonymously with mural (wall painting), the European technique of painting on a still-damp plastered surface. Maya murals were painted this way.
- GLYPH. Short for hieroglyph. A drawn symbol in a writing system. In Mesoamerican systems, a glyph may stand for a syllable, a sound, an idea, a word, or a combination of these qualities.
- GRAPHEME. A minimum unit of written meaning.
- HACHA (SPANISH: AXE). An axelike small stone sculpture usually carved into a human or animal likeness. Found most commonly in the Veracruz lowlands and Guatemalan highlands in Classic times.
- HIEROGLYPH. A term derived from Egyptology meaning literally, “priestly writing.” Adopted in Mesoamerican archaeology to mean the depictive, art-related

systems of writing developed there. Hieroglyphs are the units themselves.
See GLYPH.

INCENSARIO. An incense burner. Mesoamerican ceremonies, both religious and political, involved incense burning in special vessels made of pottery and sometimes of stone. These *incensarios* are often decorated with elaborate religious symbolism.

INITIAL SERIES. Maya inscriptions of the Classic period often open with the complete designation of a point in time, using the “long count.” This chronological statement is the initial series.

KATUN. A period of 7,200 days (about twenty years) in the Maya long-count calendar. Used in the period A.D. 1250–1520 as an abbreviated notation system for the longer dates used in the Classic period.

KIN (MAYA: “SUN”). The single-day unit in the Maya calendar.

LIENZO. A large, maplike document made of cloth or animal skin, similar to a codex. It was often a map showing the traditional landholdings of a native community or family. The famous *Lienzo de Tlaxcala*, however, shows the Spanish Conquest and the important part played in it by the Tlaxcalans, traditional enemies of the Aztec. A *lienzo* differs from a codex only in physical characteristics, being rectangular or irregular in shape instead of a long screen-fold of indefinite length.

LINTEL. A beam of wood or stone supporting the wall above a doorway. In many Mesoamerican areas, it is carved with scenes and written texts.

LONG COUNT. The Classic-period Maya system of dating, which could specify a point in time to infinity. Such a date is usually noted as being in a specific BAKTUN (cycle of about 400 years), KATUN (cycle of about 20 years), TUN (cycle of 360 days), UINAL (cycle of 20 days), and on a specific day (KIN). In addition the day was specified in the cycles of 18 months of 20 days each, 20 named days, and 13 numbers.

“LOST WAX” PROCESS. A metal casting technique much used by Mesoamericans of Protohistoric times. A wax sculpture is made, then a pottery casing is formed around it, leaving several vents. Metal is poured into one of the vents; melted wax and heat leave by the other vents. The cooling metal assumes the shape of the wax sculpture by filling the inside form of the pottery casing.

LUNAR SERIES. The part of the text following the date specification (initial series) of a Classic Maya inscription. The subject matter consists of dating the moon phase and notation of associated god(s).

MACEHUALI (PL. MACEHAULTIN). A member of the Aztec commoner class and invariably a member of a CALPULLI. Theoretically a *macehualli* was a free man, but with obligations as a CALPULLI member and also through it to the city-state.

MANIKIN SCEPTER. A badge of office often held by Maya rulers depicted in Classic sculpture. The “manikin scepter deity” may be a corn god.

- MAYE (PL. MAYEQUE). A member of the Aztec serf class. Attached to the private estates of the aristocratic class and therefore landless. Apparently a *maye* did not belong to a CALPULLI. However, it may be that this is a synonym for MACEHUALLI.
- MAZAPAN WARE. Toltec (Postclassic) horizon marker in central Mexico. Pottery of orange color was decorated with multiple parallel, wavy red lines. Most often on MOLCAJETE forms.
- MEGAFaUNA. Giant forms of animal species characteristic of the Pleistocene. At least three kinds of elephant and a giant species of bison (buffalo) existed in North America and either died out or were replaced by smaller species toward the end of the Ice Age.
- METATE AND MANO. Food grinding apparatus of all Mesoamericans. METATES were slab- or trough-shaped stones and MANOS were loaf-shaped stones used to grind the substance (for example, corn) against the METATE. These implements are still in wide use in Mexico and Guatemala, although they are being replaced by village mills.
- MEXICA. Literally, the followers of Meci, a legendary leader of the Aztec or Mexica on their way from Aztlan or Chicomoztoc to the Basin of Mexico.
- MOLCAJETE. An open bowl form with feet and a roughened bottom. Usually interpreted as a chile grinder.
- MUSHROOM STONE OR POT. Effigy of mushroom in either clay or stone. Most common in Late Formative period in the Maya area. May be associated with hallucinogenic mushrooms used to induce visions as a part of a religious experience.
- NAHUA (NAHUAT, NAHUATL). *Nahua* are the speakers of an important language family. *Nahuatl* is a group within that family and seems to be more ancient than the *Nahuatl* group. The Aztec spoke *Nahuatl*.
- OBSIDIAN DATING. A means of absolute dating by which the hydration layers (patina) of a piece of obsidian are measured. The thickness of the hydration layers indicates how long it has been since the obsidian artifact was manufactured. Not very reliable in some areas.
- OLLA (SPANISH: POT). Usually refers to a pottery vessel used for cooking.
- PALMA. A specific kind of thin, portable sculpture designed to be worn in the belt as an ornament. Found in lowland Veracruz.
- PATOLLI. A board game widespread in Postclassic Mesoamerica. The board and rules are somewhat like those for the South Asian game of *pachisi*, but there is apparently no historical connection between the games.
- PERCUSSION. Technique by which stone flakes are removed from a block usually of flint or obsidian. A blow is struck with a stone at the edge of the block of stone (direct percussion), or a hammer stone is used to tap a chisel against the edge of the stone block (indirect percussion).
- PETATE. Mat woven of reeds or grass and usually used for floor covering and as a sleeping mat. *Petates* are still in use today.

- PILLI (PL. PIPILTIN). A member of a current or former ruling lineage of the Aztec upper class.
- PISOTE. Coatimundi; a medium to large rodent common in the tropical forests of Mesoamerica. There are two sizes: the smaller, which runs in packs, and the larger, which goes in pairs. It is one of many animals used by the Maya as models for their glyphs.
- PLEISTOCENE. The last major stage of the Wisconsin glaciation. Generally dated as beginning about one hundred thousand years ago and having lasted until about seven thousand years ago.
- PLUMBATE. Pottery type decorated with a lead-colored glaze, manufactured in the Izapa-Tajumulco zone and widely traded throughout Mesoamerica in Postclassic times.
- POCHTECA. The long-distance merchants of Tlatelolco, the twin city of Aztec Tenochtitlan. The term is also used generically for all long-distance merchants in Mesoamerica. The merchants were a privileged and often aristocratic class sponsored by the state. They often acted as military and intelligence units.
- POSOLE. A drink in which maize dough is dissolved in water. The difference between ATOLE and *posole* is one of degree, the latter being more diluted and the former often having additional sweetening and spices added.
- POT IRRIGATION. A simple irrigation method by which a pot of water is poured upon each plant in a narrow field around which are dug wells to the water table, the latter usually being within ten feet of the surface.
- “POX” POTTERY. Pottery the surface of which is dimpled with pockmarks created by poorly controlled firing. Expansion of the clay in the pottery caused bits of the surface to flake away, leaving the dimples.
- PPRECLASSIC. Synonym for Mesoamerican Formative.
- PUNCTATION. Pottery decoration technique by which the surface of a pot is indented using a sharply pointed instrument or even fingernails.
- PUTUN (MAYA). Chontal-speaking Maya from the Tabasco zone of the Gulf Coast. Natives from Poton-chan, a capital of the Chontal in the sixteenth century. They may have invaded the Classic Maya Lowlands at the end of the Classic period.
- QUIDS. Mouthfuls of early corn, which was chewed for its juices, being such a small plant. The residues of chewed vegetable matter were discarded as quids. These residues are often found in the dry caves of Mesoamerica, for example, those of the Tehuacan Valley.
- REPOUSSÉ. Technique by which thin sheets of metal, usually gold or copper, are decorated. Cold hammering of the metal from the back raises the front of the piece into a design.
- RESIST PAINTING. Pottery decoration technique in which the vessel is painted with the design in wax or grease. A slip or thin paint is then applied to the pot. Upon firing, the paint resting on the waxed areas is burned away, leaving the design subtly shown in the unslipped areas.

- ROCKER STAMPING. Technique of pottery decoration especially in vogue in Early and Middle Formative times. The rounded edge of a shell or sherd was rocked back and forth over the wet surface of a pot to form a continuous in-and-out line.
- ROOFCOMB. A free-standing wall built atop elevated Maya temples with the function of providing broad areas for modeling human figures and hieroglyphs in stucco, providing a sort of billboard effect. It apparently fulfilled the same purpose as the stelae.
- SACBE (MAYA: WHITE WAY). Raised causeway-roads that connect many Maya cities, both internally and externally.
- SETTLEMENT-PATTERN STUDIES. Studies of the disposition of houses and communities over the landscape. These patterns reveal relationships and hierarchical structures from which archaeologists deduce information about social and political arrangements, for example.
- SHELL MIDDENS. Heaps of discarded shell at prehistoric sites where the principal food was shellfish.
- SHORT COUNT. The same as the calendar round; an abbreviated Maya date.
- SLATE WARE. Pottery ware of the northern and intermediate lowlands of the Maya Lowlands. Handsome, greenish-white pottery, which may be decorated.
- SLIP. A colloidal solution of clay and pigment either painted on a pot or into which a pot is dipped to give it a color other than that of its natural clay.
- STELA. Erect stone monument, often sculptured. *Stelae* were most often used by the Maya, Olmec, and Izapan cultures.
- STIRRUP JAR. Jar with a spout shaped to form a stirrup; a single orifice allows a flow of liquid.
- SWIDDEN. Synonym for the slash-and-burn system of agriculture, in which forest is cut down and the land is cultivated for a time, abandoned, allowed to recover, after which the cycle is repeated.
- TALPETATE. A soil level in the Guatemalan highlands that is made up of compacted volcanic ash, yellowish and claylike in characteristics.
- TALUD-TABLERO. Architectural feature characteristic of the Teotihuacan Classic period. Used on terraced platforms in which each terrace slopes upward (the *talud*) toward a recessed vertical panel (the *tablero*).
- TAMALE. A delicious dish in which a preparation of chopped meat is encased in cornmeal dough, wrapped in a corn shuck, and steamed. It is eaten piping hot after the shuck is discarded.
- TECCALLI. Lower judicial court for Aztec commoners.
- TECOMATE. Literally, a gourd vessel, or a pottery vessel that looks like a gourd with the neck cut off. One of the earliest forms of pottery.
- TECUHTLI (NAHUATL: LORD). An honorific title given to various kinds of Aztec nobility, usually in combination with a modifying title; for example, *amiztlato-Tecubtli*, "lord of the hunt."

- TEMPLE MOUND/PYRAMID. Mesoamerican “pyramids” are actually platforms that are usually terraced and are never pyramidal in shape as are Egyptian pyramids. The platforms almost invariably supported temples of wood or stone and are sometimes known as temple mounds. Most archaeologists prefer to call them “temple structures,” but some insist on retaining the older term, “pyramid.”
- TEOCENTLI. A grass, and closest relative of maize or corn. There is argument over its relationship to corn concerning whether it is an ancestor or an offspring.
- TLACHTLI. The Aztec word for the ball court in which the Mesoamerican ball game was played. Each town seems to have had at least one.
- TLACXITLAN. Aztec higher judicial court used for appeals from the TECCALLI. Also the principal law court for aristocrats.
- TLALOQUE. The Aztec rain gods. Usually refers to the multitude of small helpers to the great rain god, Tlaloc.
- TLATOQUE (PL. TLATOANI). A city-state ruler of the Basin of Mexico and member of the aristocratic PIPILTIN class. Usually from a hereditary leadership lineage within the class.
- TONALPOHUALLI. The Nahuatl name for the 260-day sacred almanac.
- TORTILLAS. Flat, thin corn-dough cakes cooked on a griddle (COMAL). Perhaps a relatively late and regional development in the use of corn flour in Mesoamerica, *tortillas* substituted for wheat bread in ancient Mexico and Guatemala.
- TRAIT. A distinctive and notable cultural characteristic, such as a pottery decorative motif. The term is often used in old-fashioned diffusion studies of archaeological cultures. The preference is now to study functionally related groups of traits.
- TRIPSACUM. Member of the grass family and a relative of corn and TEOSINTE.
- TUMPLINE. A band of leather or woven grass that can be attached to a heavy load. The load is lifted onto the lower back of the human porter, and the band is placed around the forehead. At a dog trot, a Mesoamerican merchant could travel considerable distances with respectable loads. *Tumplines* are still used today by itinerant merchants in the Maya Highlands.
- TUN. A 360-day period in the Maya LONG COUNT dating system.
- TZOLKIN. The 260-day calendar among the Maya (who may not have used this word). It was made up of 20 named days and 13 numbers ($20 \times 13 = 260$ combinations).
- TZOMPANTLI. Nahuatl word for skull rack. The Aztec displayed the skulls of their sacrificial victims on wooden frames in their town squares.
- UAYEB. The last, unlucky five days of the year in the Maya calendar.
- UNAL. A twenty-day period in the Maya LONG COUNT system of dating.
- VOLADOR CEREMONY. A ritual still practiced today in Mexico. Dancers dressed as birds ascend to the top of a tall pole, from which they launch themselves into the air upside down attached to the top of the pole by ropes. The

ropes have been wound intricately around the pole and gradually unwind, bringing the dancers to the ground once more. In ancient times there was much calendrical symbolism in the number of dancers, the number of revolutions in their descent, and other variables.

YOKE-PALMA-HACHA. Small stone sculpture complex from Classic-period lowland Veracruz cultures. Yokes all may be associated with important dress used by ball players in ritual associated with the ball game.

ZONED DENTATE STAMPING. A technique of pottery decoration by which a zone was marked off by incised lines on the surface of a pot. The zone was then filled with marks that resemble those that would be left by a modern hair comb if the teeth were repeatedly jabbed into the wet clay. Especially favored in the Early and Middle Formative.

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Abbreviations

BAE	Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.
CIW	Carnegie Institution of Washington, Washington, D.C.
HMAI	<i>Handbook of Middle American Indians</i> , 19 vols. Ed. Robert Wauchope. Austin: University of Texas Press, 1964–74.
ICA	International Congress of Americanists (meets every three years, alternating between New and Old Worlds).
INAH	Instituto Nacional de Antropología e Historia, Mexico City.
MARI	Middle American Research Institute, Tulane University, New Orleans.
NWAF	New World Archaeological Foundation, Provo, Utah.
PMP	Papers of the Peabody Museum, Harvard University, Cambridge, Mass.
UCARF	University of California Archaeological Research Facility, Berkeley, Calif.
VUPA	Vanderbilt University Publications in Anthropology, Nashville, Tenn.

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